



INSTALLATION GUIDE



**6 SOURCE, 6 ZONE MULTIZONE RECEIVER
WITH BUILT-IN AM/FM TUNER AND iPod® PLUG-AND-PLAY INTEGRATION**

ZR-6

CONGRATULATIONS!

Thank you for purchasing the **Niles ZR-6 MultiZone Receiver**. With proper installation and operation, you should enjoy years of trouble-free use. Niles manufactures the industry’s most complete line of custom installation components and accessories for audio/video systems. To see the complete Niles product assortment, visit us on the Internet at: **www.nilesaudio.com**



Figure 1. Niles ZR-6 MultiZone Receiver

The **Niles ZR-6 MultiZone Receiver** is the centerpiece of a six-source, six-zone distributed home entertainment system. Up to six stereo audio sources, including the built-in AM/FM tuner, can be connected, distributed, and controlled throughout the home. The ZR-6 MultiZone Receiver features plug-and-play iPod integration, with full metadata supported. There are two Master Keypads available for local control, with an accessory keypad available for additional functionality. When partnered with the Niles VS-6 High Definition Component Video Switcher, the ZR-6 system will also distribute high definition video to any of the six zones.

BOX CONTENTS

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| <ul style="list-style-type: none">• (1) ZR-6 MultiZone Receiver• (1) Removable Power Cable• (1) 2 meter iPod Interconnect Cable• (2) Rack Mount Ears• (1) R-8L Hand-Held Learning Remote Control• (1) Safety Sheet | <ul style="list-style-type: none">• (1) System Guide• (1) Warranty Card• (1) FM Dipole Antenna• (1) AM Loop Antenna• (1) R-6L and R-8L IR Code Guide |
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After unpacking and before installation, carefully inspect the contents. If any damage is discovered due to shipping, contact Niles for assistance (see back cover or Warranty Card for contact information).

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FEATURES AND BENEFITS

SIX-SOURCE, SIX-ZONE MULTIZONE RECEIVER — The ZR-6 independently distributes up to six audio sources to up to six zones to provide high-quality entertainment throughout the home.

BUILT-IN AM/FM TUNER — A digital AM/FM tuner with 20 preset stations is built into the ZR-6 MultiZone Receiver to provide radio reception without any additional components, connections, or programming.

PLUG-AND-PLAY iPod INTEGRATION — The ZR-6 MultiZone Receiver includes a 30-pin iPod connection cable to fully integrate this popular audio source into the system. Full metadata is supported. NOTE: Only USB Host Devices are supported.

HAND-HELD LEARNING REMOTE CONTROL — The included learning remote control “learns” the commands to operate the ZR-6’s source audio components and comes pre-loaded with IR codes for today’s most popular brands of equipment. In addition, the remote also has the ability to build IR sequences.

CHOICE OF COMPATIBLE KEYPADS — The Solo-6 IR Master Keypad offers basic system control. The Solo-6 MD Master Keypad adds an LCD screen with metadata. The Numeric-6P Accessory Keypad can be combined with the Solo-6 IR for additional functionality and control.

12-CHANNEL DIGITAL AMPLIFIER — The efficient digital amplifier delivers 50 watts to each zone (8 ohms, any zone driven).

RS-232 AND DISCRETE IR CONTROL — Control systems from both Niles and other manufacturers can be seamlessly integrated with the ZR-6 MultiZone Receiver.

PREAMPLIFIER OUTPUTS WITH 12V TRIGGERS — Zones 4, 5, and 6 are equipped with preamplifier outputs to accommodate external power amplifiers such as Niles System Integration Amplifiers®. Each preamplifier output includes a 12V trigger to automate amplifier turn-on and turn-off (see **FIGURE 9**).

SYSTEM-WIDE AUDIO PAGING — The ZR-6 MultiZone Receiver has circuitry that automatically mutes the audio and plays doorbell chimes and telephone pages through the system’s loudspeakers. When done, the audio automatically returns to its previous level. Doorbell chimes requirements DBI-1 Doorbell Interference.

CUSTOM-TAILORED SOUND — With separate bass, treble, and variable loudness adjustments on each keypad, each zone is easily calibrated for high-quality sound and balanced acoustics from room to room.

EXPANDABLE TO 18 ZONES — The system architecture allows you to expand the system to up to 18 zones by adding additional ZR-6 MultiZone Receivers. When multiple ZR-6 MultiZone Receivers are combined, each unit’s built-in AM/FM tuner remains active, making it possible to tune in different radio stations in each bank of zones (see **FIGURE 5**).

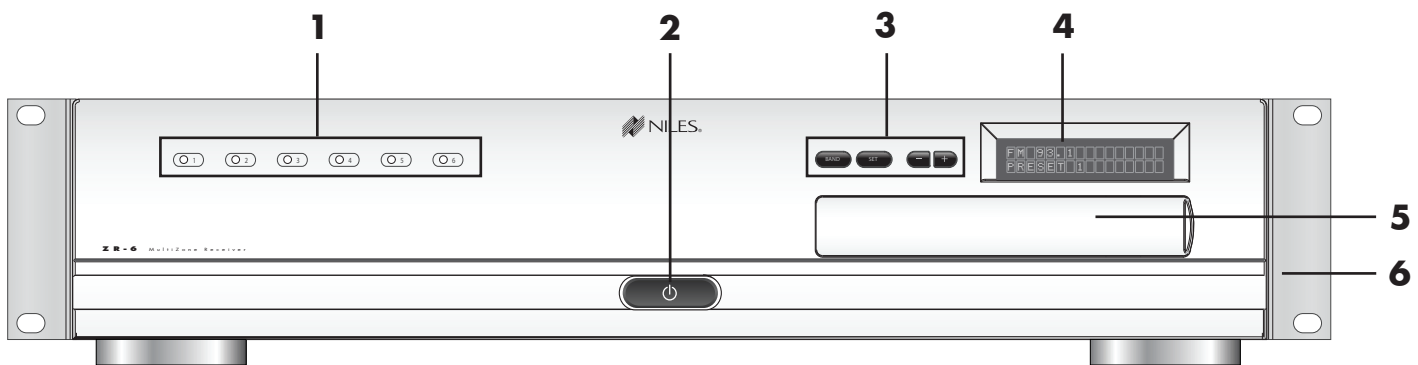
SUPPORTS UP TO THREE KEYPADS IN EACH ZONE — With the addition of a ZR-KE Keypad Expander, any zone can accommodate up to three keypads. Ideal for large rooms, bedrooms, and outdoor applications (see **FIGURE 8**).

ZONE LINKING — Permanently group up to six zones per chassis. Turn-on, source selection, and turn-off all work in unison, while retaining independent volume, bass, treble, and variable loudness in each zone.

PARTY OR WHOLE HOUSE MODE — Turns on all the zones in the house (or a pre-set number of zones) to the same audio source for background music while entertaining.

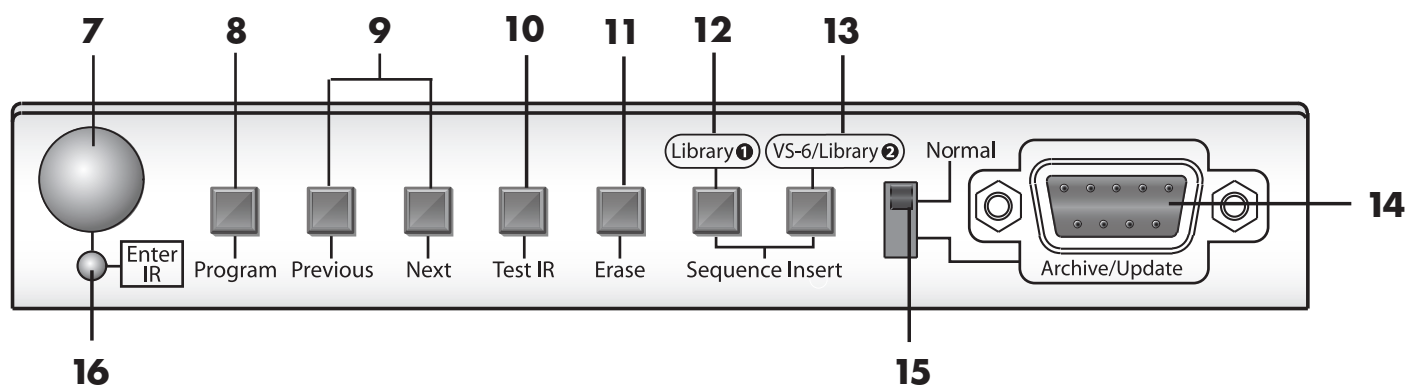
VIRTUAL HOME THEATER ZONE — The ZR-6 MultiZone Receiver can share sources with an independent home theater system via the Global IR input and Home Theater Sync connections.

ZR-6 MULTIZONE RECEIVER FRONT PANEL



- 1) LED ZONE ON/OFF INDICATORS** — Individually illuminate when the corresponding zone is active, turn off when the zone is off, and provide diagnostic information about the zone.
- 2) MAIN POWER SWITCH** — Push-button, latching switch turns the main power to the ZR-6 MultiZone Receiver ON and OFF.
- 3) BAND, SET, –, AND + PUSH BUTTONS** — Used to operate the AM/FM tuner, set favorite preset stations into memory, and perform system configuration operations.
- 4) BACKLIT LCD DISPLAY** — Two-line, 16-character, LCD display shows current tuner preset, band, programming, diagnostics information, and menus during configuration.
- 5) PROGRAMMING PANEL** — Behind a removable cover are the installer programming buttons and connections.
- 6) RACK MOUNT EARS** — Two metal rack-mount ears are included and can be attached for installing the ZR-6 MultiZone Receiver into a professional rack.

ZR-6 MULTIZONE RECEIVER PROGRAMMING PANEL



7) IR RECEIVER — Receives the IR codes from hand-held remotes during programming.

8) PROGRAM BUTTON — Enters and exits ZR-6 MultiZone Receiver IR programming and editing mode.

9) PREVIOUS AND NEXT BUTTONS — Step forward and backward through each part of the programming process.

10) TEST IR BUTTON — Transmits the last-learned IR code out of its respective IR output to verify correct operation.

11) ERASE BUTTON — Erases various parts of the ZR-6 MultiZone Receiver memory.

12) SEQUENCE INSERT (LIBRARY 1) — Inserts the stored IR commands from Library 1 into sequences to control source devices.

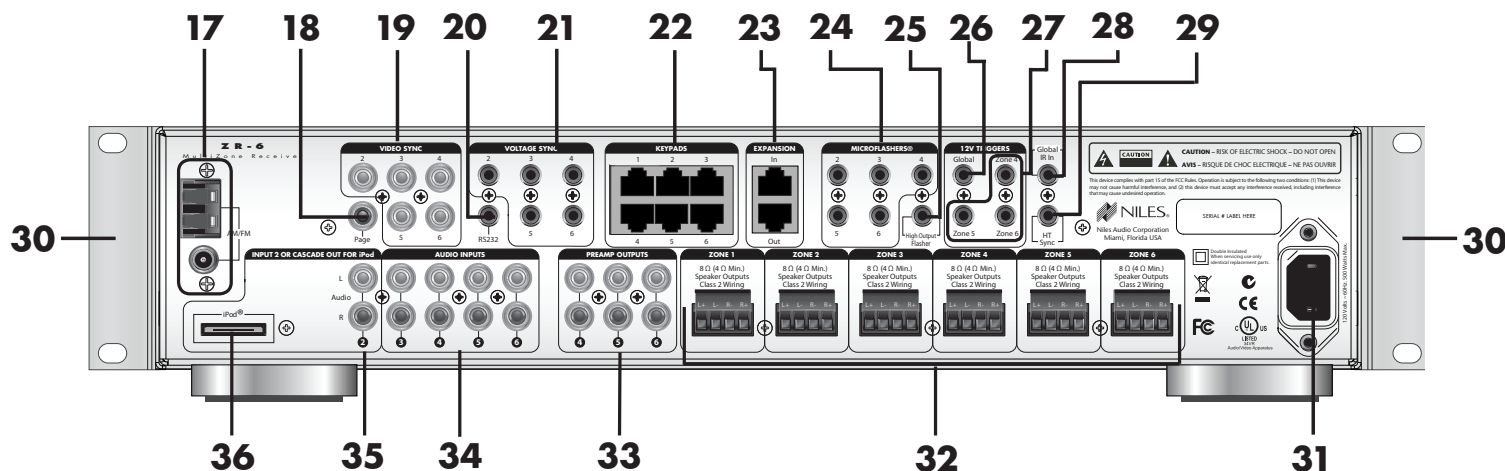
13) SEQUENCE INSERT (VS-6/LIBRARY 2) — Inserts pre-loaded VS-6 High Definition Video Switcher IR commands and/or additional stored IR commands from Library 2 into sequences to control source devices.

14) ARCHIVE/UPDATE PORT — Used to connect a computer for archiving and restoring previously saved ZR-6 configurations and or updating the firmware of the ZR-6 MultiZone Receiver and connected keypads.

15) PROGRAMMING SLIDE SWITCH — Disables the rear RS-232 connection and activates the front RS-232 connection for archiving, setup, and firmware updates.

16) IR STATUS LED — Indicates reception of IR codes by the ZR-6 MultiZone Receiver.

ZR-6 MULTIZONE RECEIVER REAR PANEL



17) AM/FM ANTENNA CONNECTIONS — For connecting the supplied AM and FM antennas.

18) PAGING INPUT — Connects to a compatible telephone system, intercom system and/or a doorbell (see **FIGURE 10**).

19) VIDEO SYNC INPUTS — Determines on/off status of connected video device by detecting presence of a video signal.

20) RS-232 PORT — A 3.5 mm stereo mini-jack is used to provide RS-232 serial communication so the ZR-6 MultiZone Receiver can be monitored and controlled by an external control system.

21) VOLTAGE SYNC INPUTS — Determine the on/off status of connected source devices by detecting the presence of a trigger voltage between 3V and 30V, AC or DC.

22) KEYPAD PORTS — Six zone-specific RJ-45 jacks are used to connect the keypads with CAT-5 cable.

23) EXPANSION PORTS — Two RJ-45 jacks are used to connect the Master MultiZone Receiver to the Slave MultiZone Receivers using CAT-5 cable.

24) MICROFLASHER® OUTPUTS — Five 3.5 mm stereo mini-jacks are used to connect the optional Niles MicroFlashers (FG01019) to control the source devices.

25) HIGH OUTPUT FLASHER — A single 3.5 mm mini-jack is used to connect an optional Niles IRB1 High Output IR Flasher (FG01023) to control multiple devices from a single flasher.

26) GLOBAL 12V TRIGGER OUTPUT — A single 3.5 mm mini-jack is used to provide a 12V DC trigger to automate the power turn-on and turn-off of connected devices such as a Niles AC-3 Voltage-triggered AC Power Strip (FG00242).

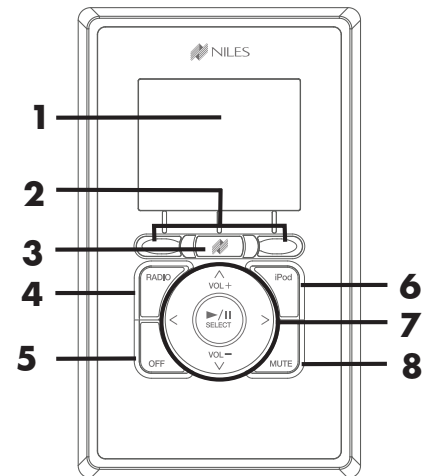
ZR-6 MULTIZONE RECEIVER REAR PANEL

- 27) ZONE FOUR, FIVE, AND SIX 12V TRIGGER OUTPUTS** — Three 3.5 mm mini-jacks are used to provide a 12V DC trigger to automate the power turn-on and turn-off of zone-specific connected devices such as Niles System Integration Amplifiers.
- 28) GLOBAL IR INPUT** — A single 3.5 mm mini-jack is used to provide an input connection for IR commands from an external control system such as the Niles iC2™ Home Theater Automation System (FG01342).
- 29) HT (HOME THEATER) SYNC INPUT** — A single 3.5 mm mini-jack is used to detect voltage from a connected home theater system to let the ZR-6 MultiZone Receiver know when the home theater is on.
- 30) RACK MOUNT EARS** — Two metal rack-mount ears are included and can be attached for installing the ZR-6 MultiZone Receiver into a professional rack.
- 31) IEC POWER CABLE CONNECTOR** — Two-pin connector for the removable power cord.
- 32) LOUDSPEAKER TERMINALS** — A removable terminal is provided for each of the six zones. Accepts speaker wire up to 14 AWG.
- 33) ZONE FOUR, FIVE, AND SIX PREAMPLIFIER OUTPUTS** — Three pairs of stereo RCA jacks are used to connect external power amplifiers. Can be switched between fixed or variable output.
- 34) SOURCE AUDIO INPUTS** — Four pairs of stereo RCA jacks are used to connect stereo audio to Sources 3-6.
- 35) SOURCE 2 AUDIO INPUT/iPod CASCADE AUDIO OUTPUT** — A pair of stereo RCA jacks are used to provide an analog input for a Source 2 external device when an iPod is not being used with the system. With an iPod, these jacks become cascade audio outputs to route the iPod's audio signal to a Slave ZR-6 MultiZone Receiver.
- 36) iPod CONNECTOR** — A 30-pin connector is used to provide a connection for an iPod digital music player as Source 2.

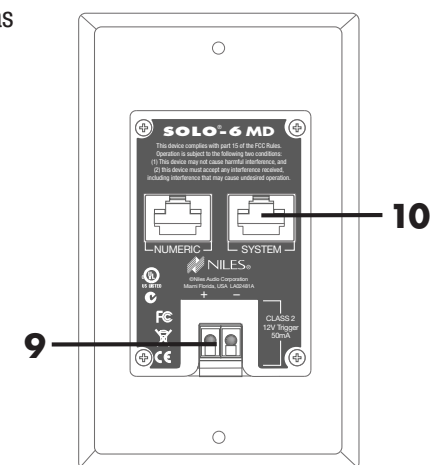
SOLO-6 MD WEATHER-RESISTANT MASTER KEYPAD (SOLD SEPARATELY)

- 1) LCD DISPLAY** — Provides source metadata, zone, and keypad information.
- 2) SOFT KEYS** — The function of these keys appears in the LCD screen above and changes based on the source or menu selected.
- 3) NILES KEY** — Press to access the source selection menu. Press-and-hold for three seconds to access the keypad setup menu. Press-and-hold for ten seconds to access the keypad configuration menu. With the Zone off and the keypad backlight off, it selects the last played source.
- 4) RADIO KEY** — Provides One-Touch To Entertainment™ simplicity for the AM/FM tuner.
- 5) OFF KEY** — Press this key to turn the local zone off. Press-and-hold this key for three seconds to turn off all zones.
- 6) iPod KEY** — Provides One-Touch To Entertainment™ simplicity for the connected iPod.
- 7) CONTROL KEYS** — Include Volume Up and Volume Down plus playback functions such as Play, Pause, Previous, and Next.
- 8) MUTE KEY** — Mutes the sound in the zone
- 9) LS-IOP CONTROL OUTPUT** — A 12V control output that activates when the keypad is on.
- 10) SYSTEM PORT** — A RJ-45 jack is used to connect the keypad to the Keypad Port of the ZR-6 MultiZone Receiver.

Front Panel of Solo-6 MD



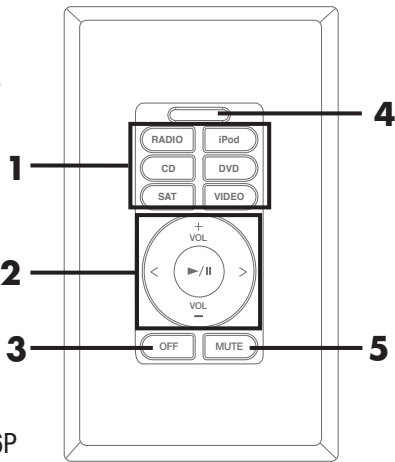
Rear Panel of Solo-6 MD



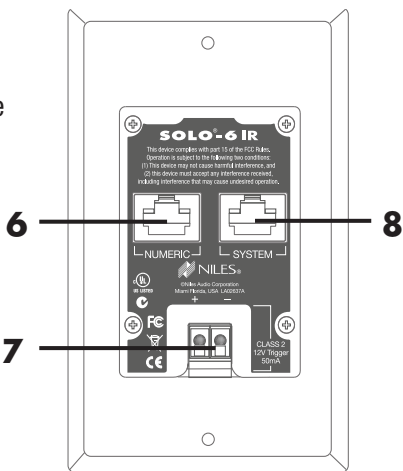
SOLO-6 IR WEATHER-RESISTANT MASTER KEYPAD (SOLD SEPARATELY)

- 1) **MASTER KEYS** — Custom labeled keys that turn the zone on and play the selected source device.
- 2) **CONTROL KEYS** — Include Volume Up and Volume Down plus playback functions such as Play, Pause, Previous, and Next.
- 3) **OFF KEY** — Press this key to turn the local zone off. Press-and-hold this key for three seconds to turn off all zones.
- 4) **BUILT-IN IR SENSOR** — A plasma LCD-proof IR sensor
- 5) **MUTE KEY** — Mutes the sound in the zone.
- 6) **NUMERIC PORT** — A RJ-45 jack is used to connect the Solo-6 IR Keypad to a Numeric- 6P Accessory Keypad (FG01442).
- 7) **LS-IOP CONTROL OUTPUT** — A 12V control output that activates when the keypad is on.
- 8) **SYSTEM PORT** — A RJ-45 jack is used to connect the keypad to the Keypad Port of the ZR-6 MultiZone Receiver.

Front Panel of Solo-6 IR



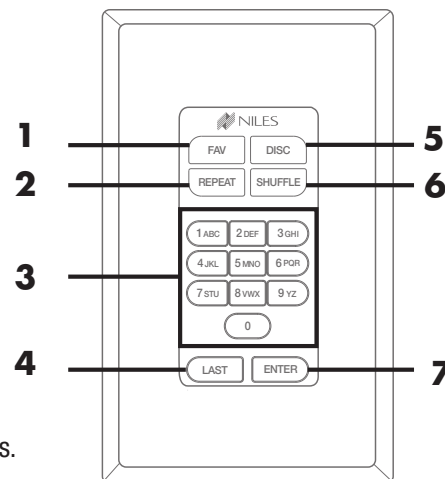
Rear Panel of Solo-6 IR



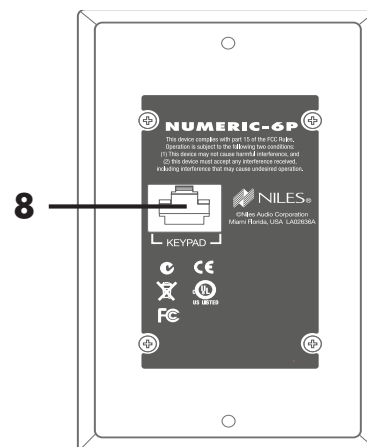
NUMERIC-6P WEATHER-RESISTANT ACCESSORY KEYPAD (SOLD SEPARATELY)

- 1) FAV KEY** — Allows direct access of preset favorites using the 0-9 keys.
- 2) REPEAT KEY** — Activates the repeat mode.
- 3) 0-9 KEYS** — Provide direct access to radio stations, channels, and preset favorites.
- 4) LAST KEY** — Returns to the previous channel.
- 5) DISC KEY** — Activates the disc or album mode on an iPod, music servers and other devices.
- 6) SHUFFLE KEY** — Toggles the shuffle (or random) mode on and off.
- 7) ENTER KEY** — Required by some devices to enter channel numbers or for direct access.
- 8) KEYPAD PORT** - A RJ-45 jack is used to connect the Accessory Keypad to the Solo-6 IR.

Front Panel of Numeric-6P



Rear Panel of Numeric-6P



R-8L LEARNING REMOTE CONTROL (INCLUDED)

1) POWER BUTTON – Turns the selected source device on or off.

2) SOURCE SELECT BUTTONS – Turn the zone on and play the selected source device.

3) TRANSPORT BUTTONS – Used to skip backward, rewind, fast forward, skip forward, stop, pause, or play tracks from the selected source.

4) MENU BUTTON – Displays a menu for the selected source device.

5) GUIDE BUTTON – Displays the program guide for the selected source device.

6) VOL +/- AND MUTE BUTTONS – Raise and lower the volume level. Use the MUTE button to completely mute the sound.

7) EXTENDED FUNCTION BUTTONS - Provide additional functionality for advanced features, menus, and guides.

8) SETUP BUTTON – Used when configuring the R-8L remote.

9) TV/AUX BUTTON – Provides control of a local television and an additional local source.

10) LIST BUTTON – Displays information from source devices that support this function.

11) INFO BUTTON – Displays the current channel and program information from source devices that support this function.

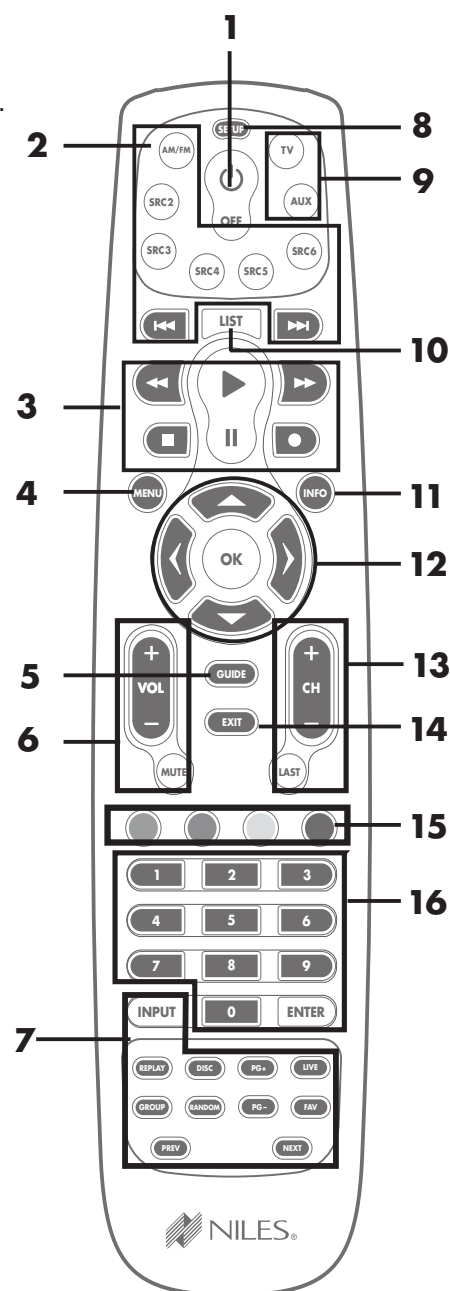
12) MENU CURSOR BUTTONS – Move the cursor in selected source device menu screens. Press OK to choose the highlighted menu option or to toggle between AM and FM tuner bands.

13) CHANNEL SELECT AND LAST BUTTONS – Select the next or previous channel and select the next or previous chapter on some DVD players. Press the Last button to recall the last-viewed channel.

14) EXIT BUTTON – Exits the selected source device's menu, guide, or program without making a menu selection.

15) SPECIAL FUNCTION BUTTONS - Used to select the AM or FM radio bands and for special DVR menu functions. The red button selects the AM radio band; the blue button selects the FM radio band.

16) DIRECT ACCESS AND ENTER BUTTONS – Directly enter channels (for example: 09 or 31). Press the Enter button to send channel number entry on certain TV models.



STAND-ALONE ZR-6 MULTIZONE RECEIVER

OVERVIEW

This diagram depicts a single Niles ZR-6 MultiZone Receiver installed to provide sound in six listening zones. Each zone includes a pair of loudspeakers (sold separately) and a Solo-6 IR or Solo-6 MD Master Keypad (also sold separately).

SOURCE DEVICES

The ZR-6 MultiZone Receiver's built-in AM/FM tuner is always Source 1. A 30-pin cable is included for the plug-and-play connection of an Apple® iPod as Source 2. In this diagram, the audio outputs of three external source devices are routed to audio inputs 3, 4, and 5 on the ZR-6 MultiZone Receiver.

MASTER KEYPADS

Master Keypads connect to the ZR-6 MultiZone Receiver by home runs of CAT-5 cable. The Solo-6 IR Keypad provides basic system functionality, while the step-up Solo-6 MD Keypad adds an LCD screen that supports source device metadata.

MICROFLASHERS

Niles MicroFlashers (sold separately) connect to the numbered MicroFlasher outputs to provide control over the source devices.

GLOBAL 12V CONTROL

A Niles AC-3 Voltage-Triggered AC Power Strip (FG00242) is connected to the Global 12V Control Output to automate source device turn-on and turn off.

LOUDSPEAKERS

Each zone has a “home run” of speaker wire from the ZR-6 MultiZone Receiver to the loudspeaker locations. The receiver features removable speaker wire terminals that accept speaker wire up to 14 AWG. Two pairs of 8 ohm loudspeakers wired in parallel (4 ohm load) can be safely utilized in each zone without the amplifier going into protection or shutting down.

ANTENNAS

The included FM dipole antenna attaches to the 75 ohm coaxial connector. The included AM loop antenna connects to the spring-loaded terminals labeled AM and GND.

STAND-ALONE ZR-6 MULTIZONE RECEIVER

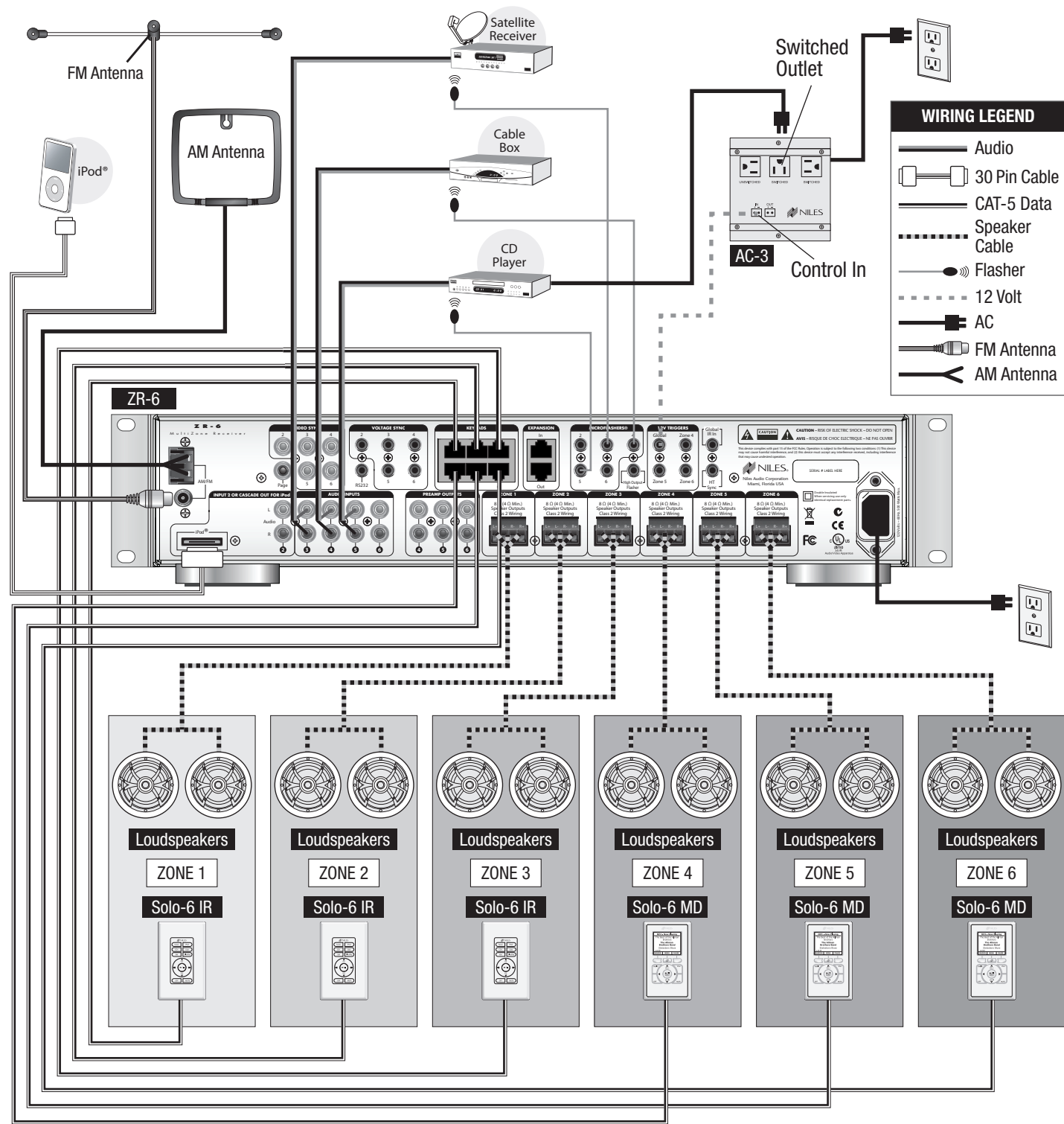


Figure 3. Stand-Alone ZR-6 MultiZone Receiver

INCLUDING DISTRIBUTED VIDEO WITH A NILES VS-6 HIGH DEFINITION COMPONENT VIDEO SWITCHER

OVERVIEW

A Niles VS-6 High Definition Component Video Switcher (FG01429) is added to distribute high definition video to displays in any of the six zones.

CONTROL CONNECTION

A 3.5 mm stereo mini plug cable is connected between the ZR-6 MultiZone Receiver's High Output Flasher to the VS-6 High Definition Component Video Switcher's IR input.

SOURCE DEVICES

The audio outputs from the source devices are routed to the ZR-6 MultiZone Receiver and the video outputs to the VS-6 High Definition Component Video Switcher. When source selection sequences are stored in the ZR-6, video source selection is programmed using the VS-6 codes which are stored in the ZR-6's Library 2.

BALANCED VIDEO OUTPUT

The balanced video output from the VS-6 is sent to the video displays using CAT-5 cabling connected to Niles C-5 HDDAWM Wall Mount CAT-5 Component Video & Digital Audio Baluns (FG01374).

INCLUDING DISTRIBUTED VIDEO WITH A NILES VS-6 HIGH DEFINITION COMPONENT VIDEO SWITCHER

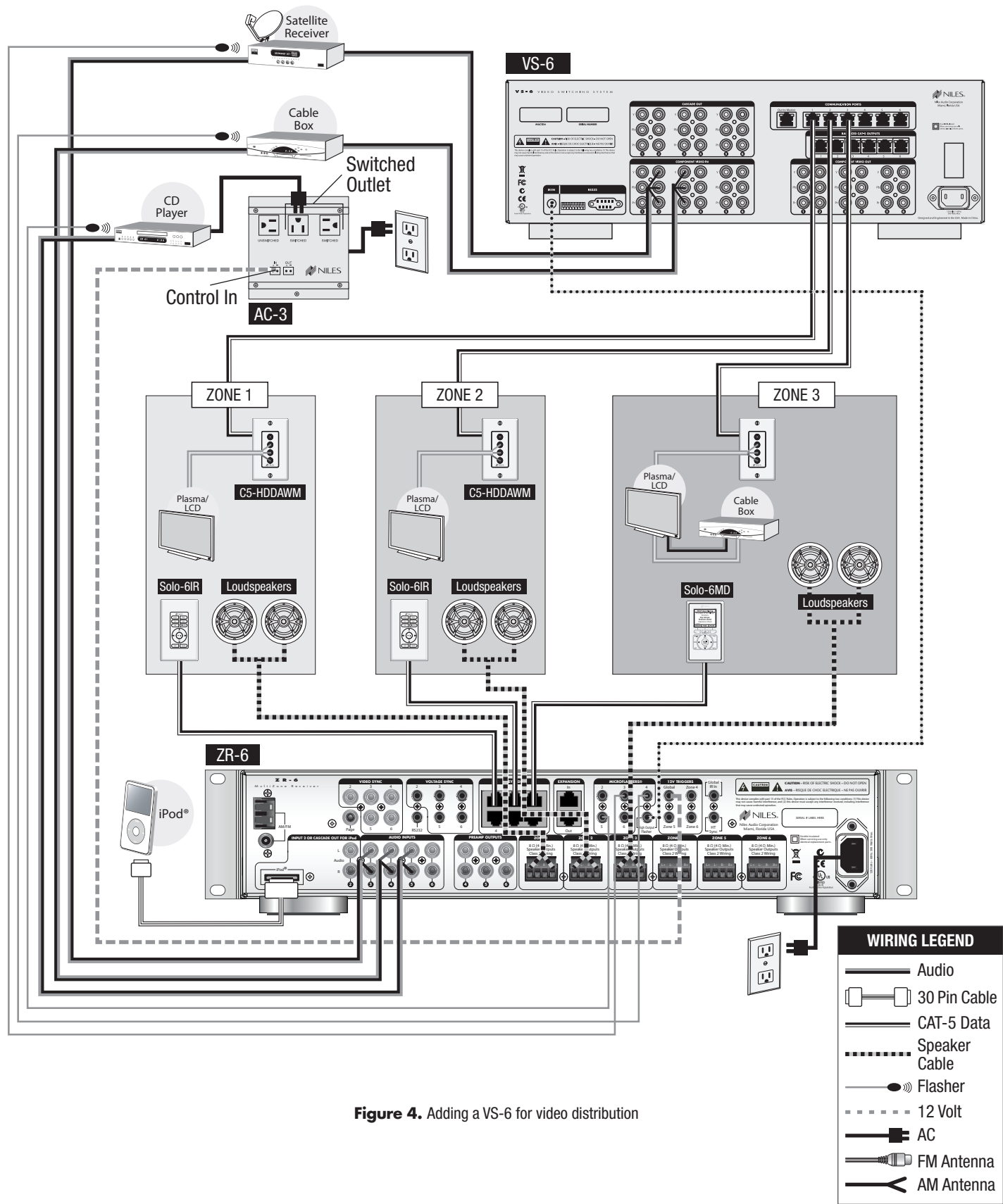


Figure 4. Adding a VS-6 for video distribution

EXPANDING TO 18 ZONES WITH ADDITIONAL ZR-6 MULTIZONE RECEIVER(S)

Figures 5a, 5b, 5c

OVERVIEW

This diagram demonstrates the expandability of the ZR-6 MultiZone Receiver. Three ZR-6 MultiZone Receivers are integrated to create a six-source, eighteen-zone distributed audio system.

EXPANSION PORTS

CAT-5 cables terminated with RJ-45 jacks are used to connect the ZR-6 MultiZone Receivers. One ZR-6 MultiZone Receiver is configured as the Master; the other two as the Slaves. The Expansion In of the Master connects to the Expansion Out of Slave 1. The Expansion In of Slave 1 connects to the Expansion Out of Slave 2 (See *System Configuration* section).

SOURCE DEVICES

The audio outputs of the source devices must be routed to each ZR-6 MultiZone Receiver (Master and Slaves). This is best accomplished using Niles AVDA-3 Source Level Stereo Audio/Video Distribution Amplifiers (FG00814). When an iPod is connected to the Master chassis, the Source 2 RCA jacks become cascade audio outputs. The cascade audio outputs are connected to Source 2 audio inputs on both Slaves.

SOURCE DEVICE CONTROL

All MicroFlashers for source device control must be connected to the Master and not the Slave(s). All IR signals from the keypads connected to the Slaves are routed to the Master via the expansion ports.

KEYPADS

Keypads for the additional zones are connected to the Slave's keypad ports via CAT-5 cables terminated with RJ-45 jacks.

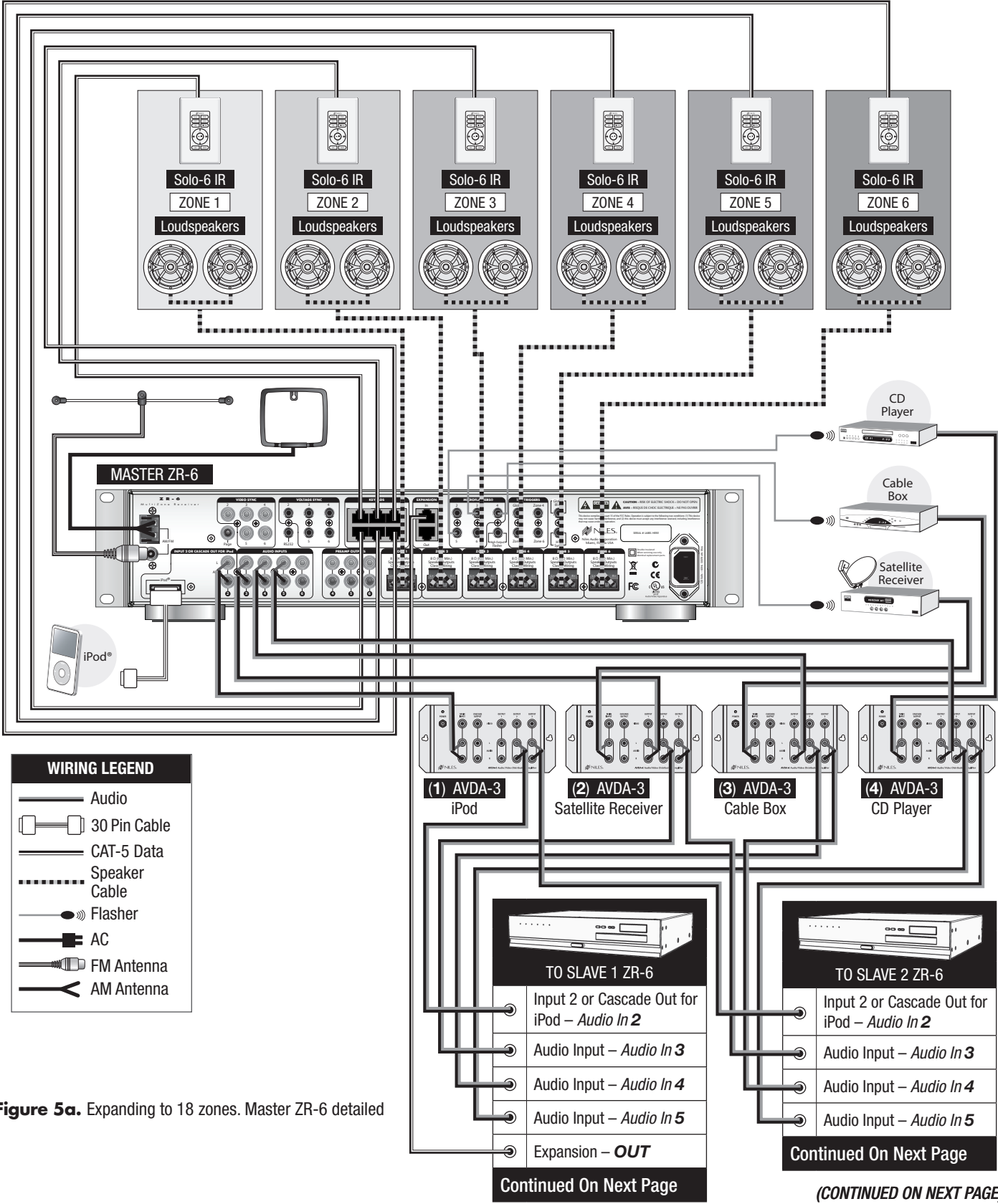
LOUDSPEAKERS

Each additional zone has a "home run" of speaker wire from the Slave ZR-6 MultiZone Receiver to the loudspeaker locations. The receiver features removable speaker wire terminals that accept speaker wire up to 14 AWG.

EXTERNAL CONTROL

All external IR or RS-232 controllers must be connected to the Master, and not the Slave(s). The control commands are routed to the Slave(s) through the expansion ports.

EXPANDING TO 18 ZONES WITH ADDITIONAL ZR-6 MULTIZONE RECEIVER(S)
Figures 5a, 5b, 5c



EXPANDING TO 18 ZONES WITH ADDITIONAL ZR-6 MULTIZONE RECEIVER(S)
Figures 5a, 5b, 5c

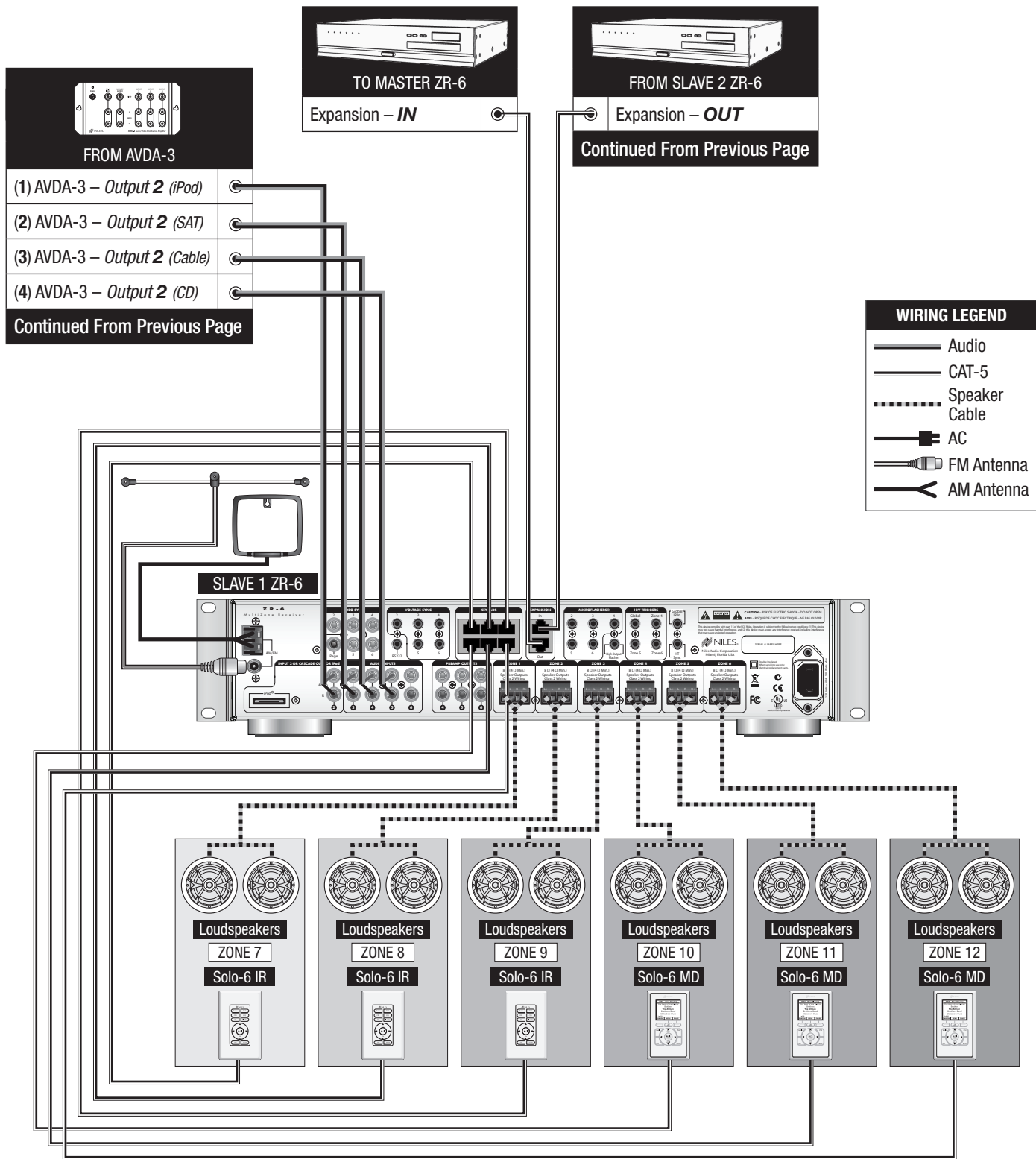


Figure 5b. Expanding to 18 zones. Slave #1 ZR-6 detailed

EXPANDING TO 18 ZONES WITH ADDITIONAL ZR-6 MULTIZONE RECEIVER(S)
Figures 5a, 5b, 5c

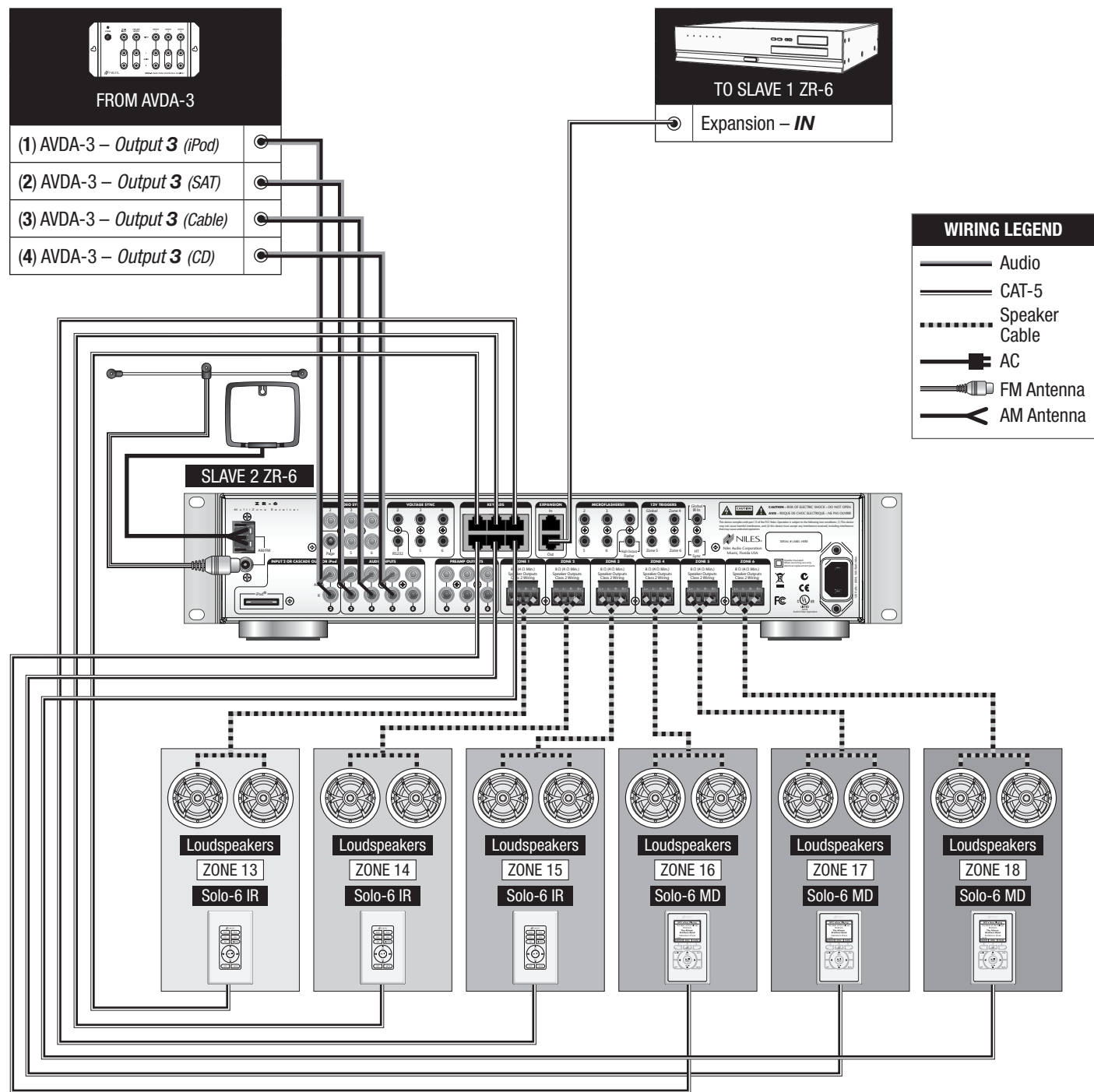


Figure 5c. Expanding to 18 zones. Slave #2 ZR-6 detailed

ZR-6 MULTIZONE RECEIVER INTEGRATED WITH A HOME THEATER SYSTEM

OVERVIEW

The ZR-6 MultiZone Receiver can share source devices with a home theater system.

IR CONTROL INPUT

The audio outputs of the source devices must be routed to both the ZR-6 MultiZone Receiver and the home theater receiver. This is best accomplished using Niles AVDA-3 Source Level Stereo Audio/Video Distribution Amplifiers (FG00814). Another method would be to use RCA Y-adaptors to split the source device outputs in two, one to the ZR-6 MultiZone Receiver, the other to the home theater receiver.

SOURCE DEVICE CONTROL

IR MicroFlashers are attached to each source device and then connected to the ZR-6 MultiZone Receiver. To route the source device IR commands from both the home theater controller and the ZR-6, an optional Niles HT-MSU Home Theater Main System Unit (FG01343) is connected to the Global IR Control input of the ZR-6 MultiZone Receiver.

HOME THEATER SYNC

Connects from the HT Sync input to a 12V output on the Niles HT-MSU Home Theater Main System Unit to let the ZR-6 MultiZone Receiver know when the home theater receiver is active. The ZR-6 MultiZone Receiver will not go into standby or turn off any source devices until all of the zones are off and this voltage is eliminated.

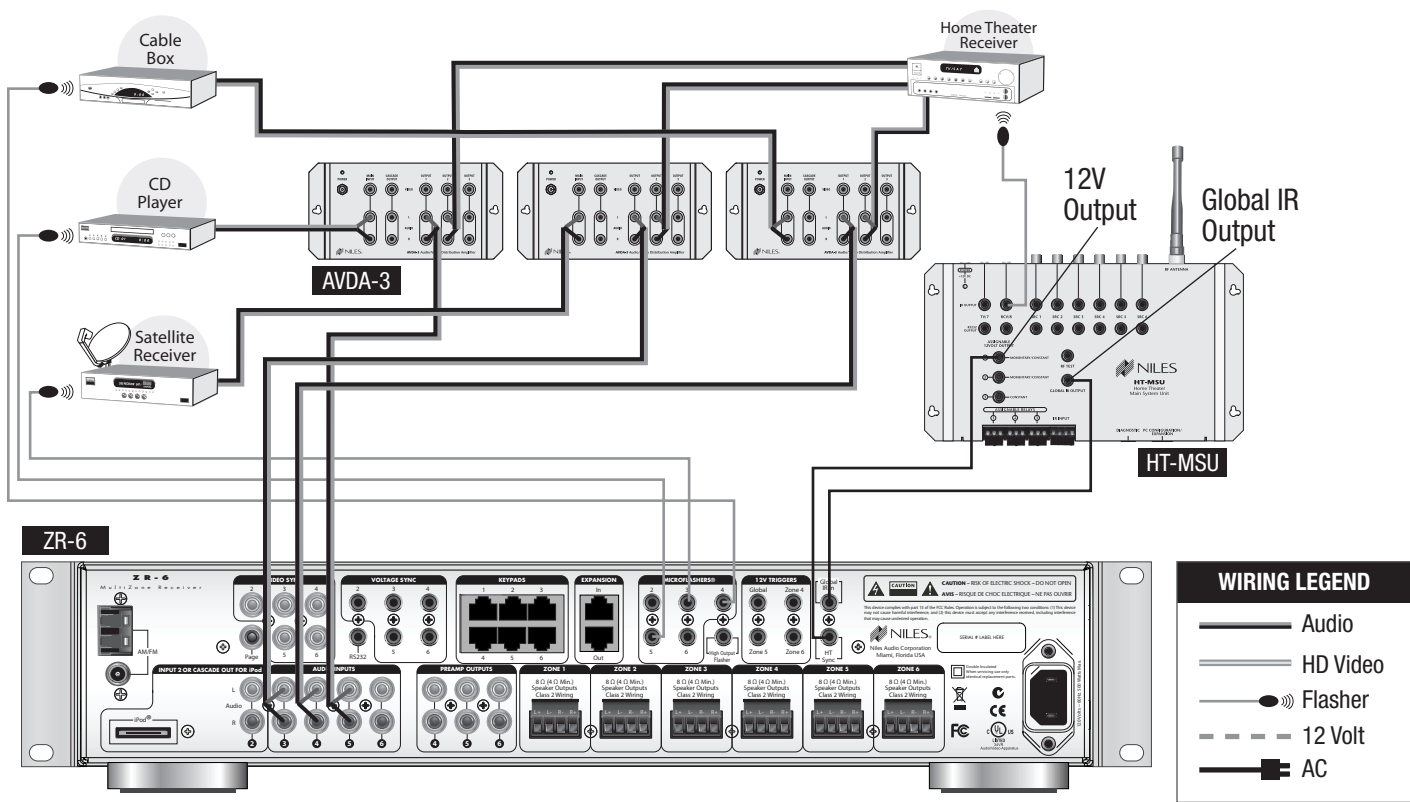


Figure 6. Integrating with a home theater system

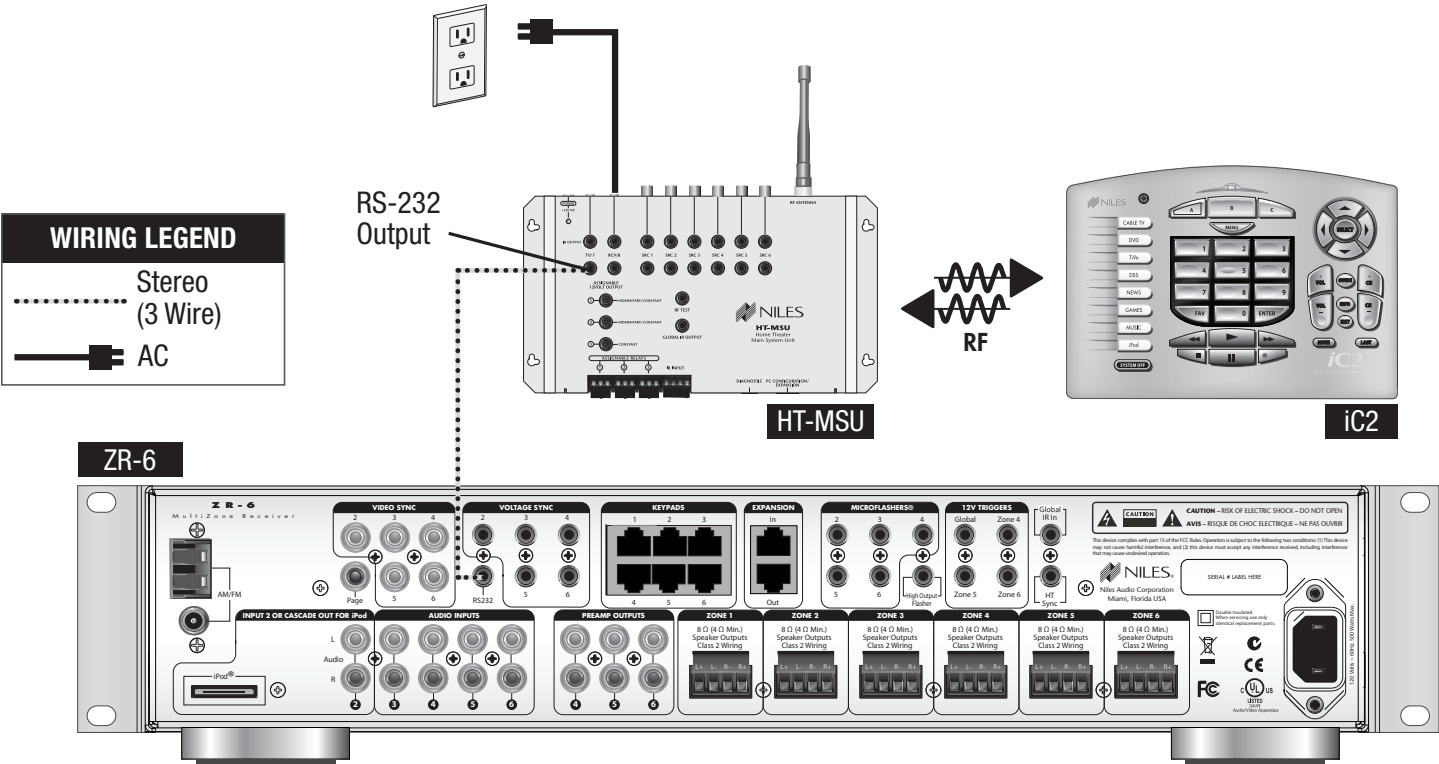
ADDING AN EXTERNAL RS-232 CONTROL SYSTEM TO THE ZR-6 MULTIZONE RECEIVER

OVERVIEW

The ZR-6 MultiZone Receiver can be integrated with an external control system that uses RS-232 serial communication.

RS-232 PORT

A 3.5 mm stereo mini-jack is used to provide RS-232 serial communication so the ZR-6 MultiZone Receiver can be monitored and controlled by an external control system. Please refer to the Appendix for the RS-232 integration control protocols.



ADDING ADDITIONAL KEYPADS TO A ZONE

OVERVIEW

Any zone of the ZR-6 MultiZone Receiver can be expanded to contain up to three keypads. This is ideal for large rooms, bedrooms, and outdoor applications.

NILES ZR-KE KEYPAD EXPANDER

The optional Niles ZR-KE Keypad Expander (FG01494) enables the use of up to three keypads per zone. A RJ-45 terminated CAT-5 cable from a ZR-6 MultiZone Receiver keypad port is connected to the input of the ZR-KE. The three keypads are then connected to the outputs of the ZR-KE using CAT-5 cable. One ZR-KE can be used for each zone, including any Slave zones when multiple ZR-6 MultiZone Receivers are used to expand the number of system zones.

KEYPAD POWER VALUE (KPV)

When a large number of keypads are used in a system, additional power may be required to power the keypads. An optional power supply (Niles 12VDC Universal Wall Adaptor FG01035) connects to the ZR-KE to supply this additional power, if necessary. To determine if the keypads require additional power, calculate the keypad power value (KPV) by adding the point values of all keypads connected to each chassis.

A single ZR-6 MultiZone Receiver Chassis will supply power up to a total KPV of 30 points. Exceeding this KPV will compromise operation of the MultiZone Receiver and/or keypads.

CALCULATION TABLE FOR KPV		ZR-6
Solo-6 IR	1 point	POWERS UP TO A TOTAL KPV OF 30 POINTS**
NUMERIC-6P	1 point	
Solo-6 MD	3 points	

**Keypads connected to a ZR-KE keypad expander that utilizes an external power supply are not included in the kpv calculation.

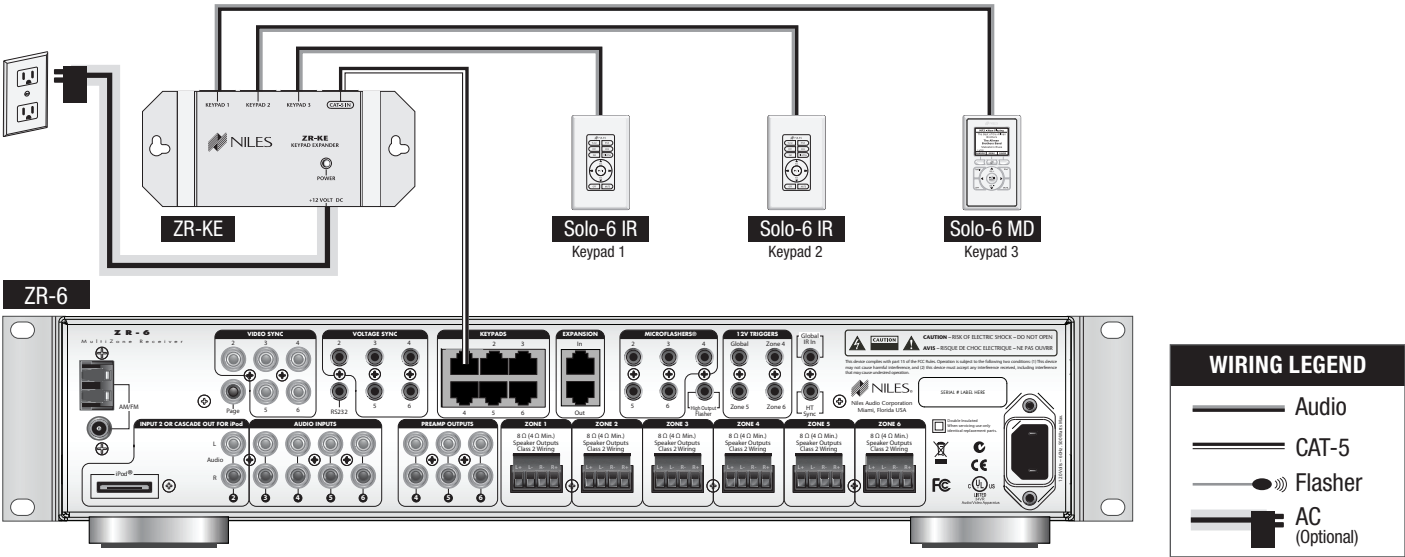


Figure 8. ZR-6 MultiZone Receiver with 3 keypads in zone

ADDING AN EXTERNAL AMPLIFIER TO ZONE 4, 5 AND 6

OVERVIEW

The ZR-6 MultiZone Receiver is equipped with preamplifier outputs for zones 4, 5, and 6 to connect external amplifiers.

PREAMPLIFIER OUTPUTS

Zones 4, 5, and 6 have preamplifier outputs used to connect an external power amplifier. If an area is particularly large or requires a high volume level, it is advised to assign it to zone 4, 5, or 6 and then connect an external amplifier such as a Niles Systems Integration Amplifier to provide additional power to the loudspeakers. The preamplifier outputs can be switched between a fixed or variable level during system setup.

12V TRIGGER OUTPUT

Zones 4, 5 and 6 each have a dedicated 12V Control Output that sends out a constant 12V DC voltage when the respective zone is active. The Global 12V Control Output will send out a constant 12V DC trigger signal when any zone is active. These triggers can be used to automatically switch on an amplifier equipped with a 12V trigger turn-on, such as a Niles Systems Integration Amplifier.

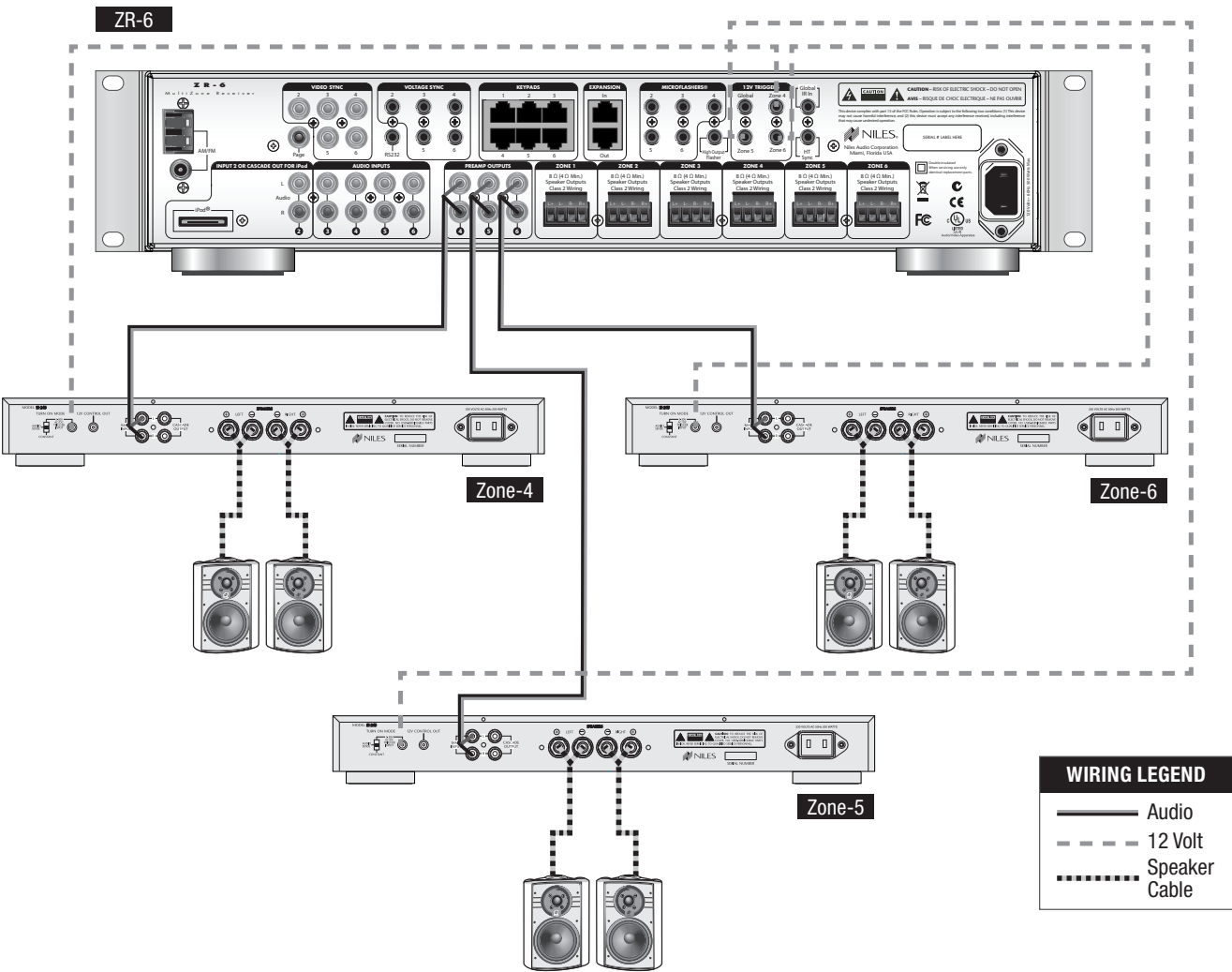


Figure 9. ZR-6 MultiZone Receiver with external amplifiers in zones 4, 5, 6

ADDING SYSTEM PAGING FROM EXTERNAL TELEPHONE SYSTEM,
INTERCOM SYSTEM AND/OR DOORBELL TO THE ZR-6 MULTIZONE RECEIVER

OVERVIEW

The ZR-6 MultiZone Receiver’s paging input provides an audio connection for voice paging and/or doorbell sounds to be played through the system loudspeakers.

SYSTEM PAGING

The paging input senses the audio input level. When a signal appears, the volume level of the currently playing source device ramps down. The paging audio signal then plays through the zone loudspeakers at a preset level. Zones can be enabled and disabled for paging in the configuration menu. By default, all zones are enabled for paging. A page will respond within one second. When the paging signal is removed for at least five seconds, the zone is switched back to the previous source device or, if the zone was previously off, it will turn off again.

DOORBELL PAGING

The optional Niles DBI-1 Doorbell Interface (FG01034) provides a selection of realistic doorbell chimes and includes connection for the output from a telephone or intercom system. For more information, see the DBI-1 Installation & Operation Guide available for download at www.nilesaudio.com.

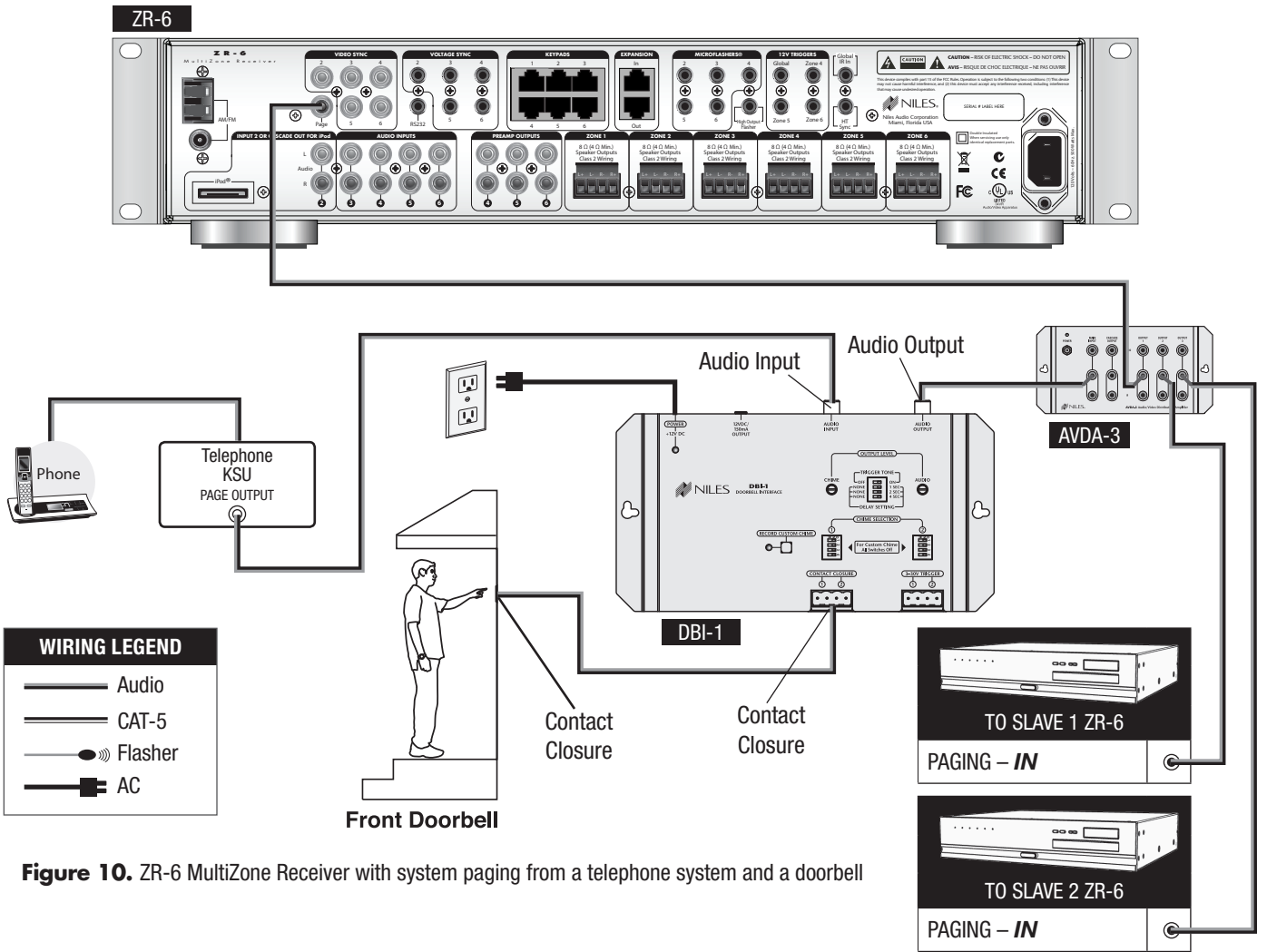


Figure 10. ZR-6 MultiZone Receiver with system paging from a telephone system and a doorbell

ZR-6 MULTIZONE RECEIVER SYSTEM INSTALLATION

PREPARATION

Before you begin, make sure the audio cables, speaker cables, CAT-5 wiring, Niles MicroFlasher wires and the power supply cable are of sufficient length to reach the ZR-6 MultiZone Receiver. Label each cable describing where each cable originates (rather than to which terminal on the ZR-6 it connects).

ATTACH THE RACK MOUNT EARS (IF NEEDED)

If the ZR-6 MultiZone Receiver is to be installed into a professional equipment rack, attach the supplied rack mount ears with the included screws. The four non-slip plastic feet are removable, if necessary.

NOTE: USE ALL 5 SCREWS WHEN MOUNTING RACK EARS.

PLACEMENT OF THE ZR-6 MULTIZONE RECEIVER

Place the ZR-6 MultiZone Receiver on a flat, level surface such as a table or shelf, with its weight equally distributed on each of its four feet. Placing the weight of the receiver on the rear or front panel for even an instant may result in damage to the receiver's connectors and controls. Like any high-fidelity component, the ZR-6 MultiZone Receiver will last much longer if it is given adequate ventilation for proper cooling. When installing the ZR-6 MultiZone Receiver in a cabinet, be sure that the rear of the cabinet is open to receive fresh air for proper cooling. Place the ZR-6 MultiZone Receiver so it has 3.75" of air space above and at least 1" free space on either side. If multiple speaker pairs are connected in more than one zone (creating a 4 ohm load in 2 or more zones), the minimum clearance above and below is 7" and a Niles FM-1 (FG01215) or FM-1R (FG01214) System Cooling Module is required to maintain proper operating temperatures. If the receiver is located on a carpeted surface, place a board under the receiver's feet. Do not block the ventilation holes on the top or bottom. When installed in a professional rack using the rack mounting ears, provide a minimum of 2 unit spaces above and below the ZR-6 MultiZone Receiver, and a fan module immediately above the ZR-6 MultiZone Receiver.

CONNECT THE AUDIO SOURCE DEVICES

Connect each source's audio output cables to the corresponding audio input connection of the ZR-6 MultiZone Receiver. When making the connections, be sure that the audio cable's two RCA connectors are fully seated and that the proper color-code is followed (white=left channel; red=right channel). The audio inputs are labeled 2, 3, 4, 5 and 6 (Input 1 is the built-in AM/FM tuner). When an iPod is used with the system, it is Input 2 and the analog Source 2 input jacks become cascade audio outputs for the iPod (**Figure 11**).

CONNECT THE IPOD

Only USB host devices are supported fully. Other iPod types may not receive power and may not be charged while connected to the ZR-6 MultiZone Receiver. The supplied iPod connecting cable is labeled "iPod" and "System". Be certain to connect the cable in its proper orientation with the "System" label facing up when connected to the ZR-6 MultiZone Receiver and the "iPod" label facing the front of the iPod.

CONNECT THE PAGING INPUT

The Page input on the rear panel of the ZR-6 MultiZone Receiver provides a connection for the paging out signal of telephone or intercom systems for voice paging through the speakers in the listening zones (**Figure 10**).

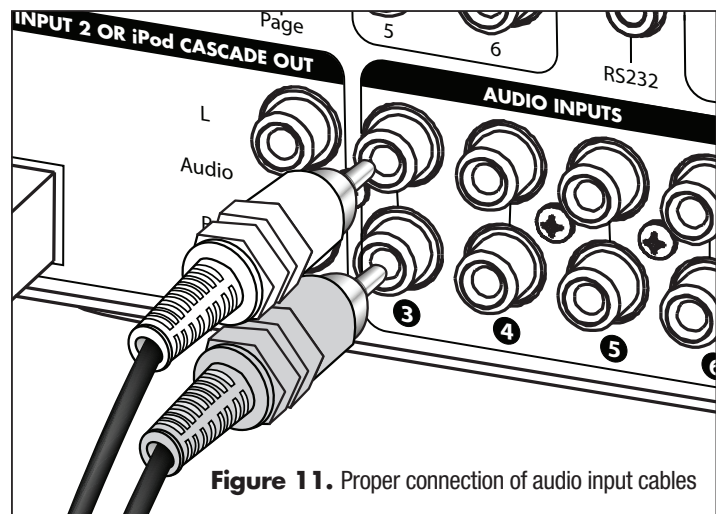


Figure 11. Proper connection of audio input cables

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ZR-6 MULTIZONE RECEIVER SYSTEM INSTALLATION

CONNECT THE LOUDSPEAKERS

CAUTION! ALL SPEAKER WIRE CONNECTIONS MUST BE MADE WITH THE RECEIVER POWER OFF.

There are six sets of removable speaker wire terminals, one for each zone. The terminals accept speaker wires up to 14 AWG in size. Each terminal has four screw-down connections for speaker wire: one positive (+) and one negative (-) for each speaker. Unscrew the connection, insert the appropriate bare speaker wire, then tighten firmly (**Figure 12**). Should a speaker output be shorted for some reason, the power-on diagnostics routine in the ZR-6 MultiZone Receiver will detect this short and display the specific output experiencing the issue on the front panel LCD display. If a speaker output is open, the amplifier for that output is disabled by the power-on diagnostics. Should a speaker be connected later, the amplifier for that output will be enabled during the next power-on sequence.

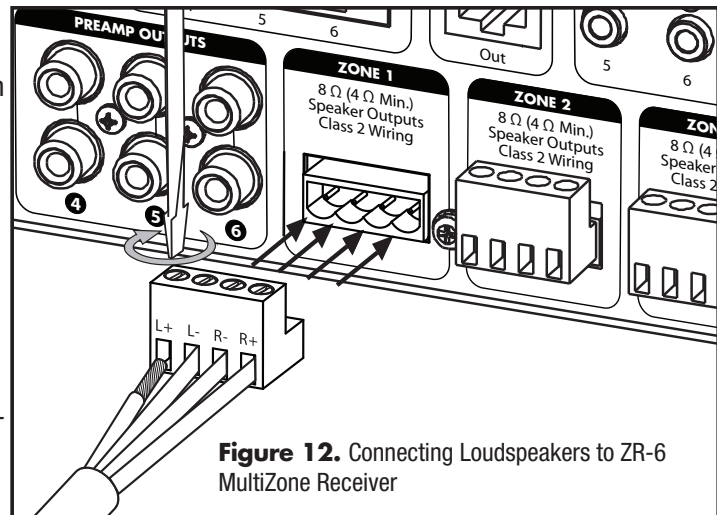


Figure 12. Connecting Loudspeakers to ZR-6 MultiZone Receiver

CONNECT THE EXTERNAL POWER AMPLIFIERS

If a zone is a particularly large area, or if high volume levels are required, it is suggested that Zones 4, 5, or 6 be augmented by an additional stereo power amplifier such as a Niles System Integration Amplifier. The zone Preamp outputs are selectable for variable or fixed output in the configuration menu. The dedicated 12V output from each respective zone can be used to turn on the System Integration Amplifier power when the zone is active. The Global 12V output can be used to turn on the System Integration Amplifier's power when any zone is active.

CONNECT THE NILES IR MICROFLASHERS

Each Niles MicroFlasher (sold separately) connects into the Flasher Outputs 2-6. The MicroFlasher portion is placed directly over the IR sensor of the corresponding source component (Source 2 for MicroFlasher 2, Source 3 for MicroFlasher 3, Source 4 for MicroFlasher 4, Source 5 for MicroFlasher 5, and Source 6 for MicroFlasher 6) and adheres with the included adhesive. Remove the protective paper cover to expose the adhesive and attach to the source component. A MicroFlasher is not used to control the iPod. The iPod receives all control signals via the 30-pin connector cable.

NOTE: DO NOT CONNECT A MICROFLASHER TO THE HIGH OUTPUT FLASHER PORT AS IT WILL DAMAGE THE MICROFLASHER.

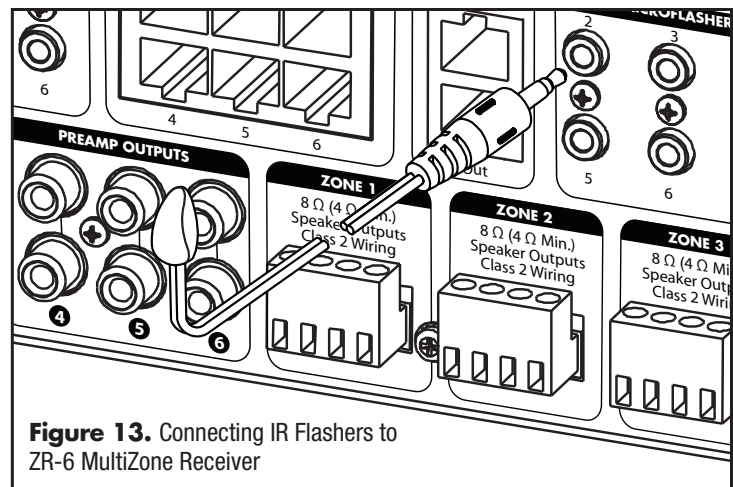


Figure 13. Connecting IR Flashers to ZR-6 MultiZone Receiver

CONNECT A HIGH OUTPUT FLASHER

A Niles IRB-1 High Output Flasher (FG1023) is used to control multiple devices. The mini-plug end of the IRB-1 connects the "High Output Flasher" output on the ZR-6 (the ZR-6 is shipped with a red plastic plug blocking this jack to prevent accidental connection of a MicroFlasher. Remove the red plastic insert by pulling it out from the jack). The IRB-1 should be positioned to provide IR transmission to all source components.

ZR-6 MULTIZONE RECEIVER SYSTEM INSTALLATION

CONNECT THE KEYPADS

Each keypad controls a specific zone. The RJ-45 terminated CAT-5 cable that runs to each keypad is connected to the ZR-6 MultiZone Receiver's keypad ports labeled: Zone 1, Zone 2, Zone 3, Zone 4, Zone 5 and Zone 6. The zone port to which each keypad connects defines the zone controlled by that keypad. For example: the keypad connected to Zone 1 will always control Zone 1. All RJ-45 terminated CAT-5 cables utilize the T568A wiring convention (Figure 14).

CONNECT THE SLAVE ZR-6 MULTIZONE RECEIVER

Multiple ZR-6 MultiZone Receivers can be combined to create up to an eighteen-zone system. The Expansion ports serially connect the multiple ZR-6 MultiZone Receivers with RJ-45 terminated CAT-5 cables using the T568A wiring convention. One receiver must be designated as the Master, the others as Slave(s). If more than one Slave is used, please note that the expansion out of Slave 2 connects to the expansion in of Slave 1. The expansion out of Slave 1 then connects to the expansion in of the Master. Do not connect more than one Slave directly to a Master. All MicroFlashers for source control must be connected to the Master and not to the Slave. IR from the keypads connected to the Slave will be routed to the Master via the expansion ports.

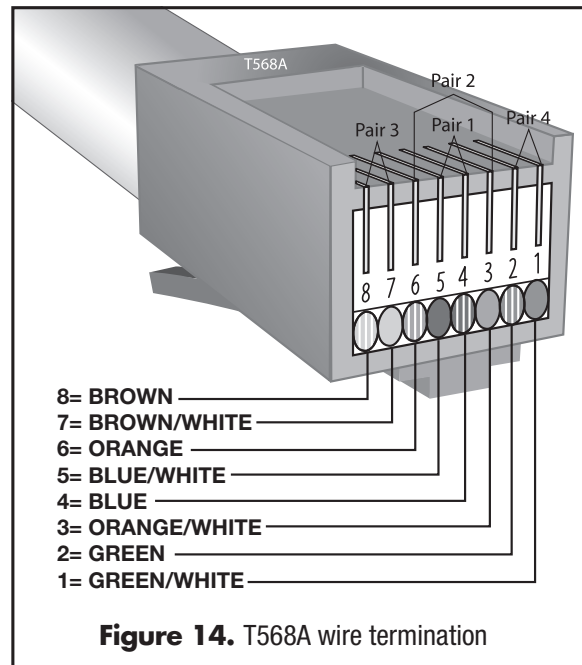


Figure 14. T568A wire termination

CONNECT THE AM AND FM ANTENNAS

FM DIPOLE ANTENNA

The included **FM dipole antenna** connects to the female 75-ohm coaxial connector. The antenna is then positioned and mounted for best reception. An antenna must be connected to each ZR-6 MultiZone Receiver chassis in Master/Slave configurations.

AM LOOP ANTENNA

The included **AM loop antenna** connects with its bare-wire ends to the spring-loaded terminals. The antenna is then positioned and mounted for best reception. An antenna must be connected to each ZR-6 MultiZone Receiver chassis in Master/Slave configurations.

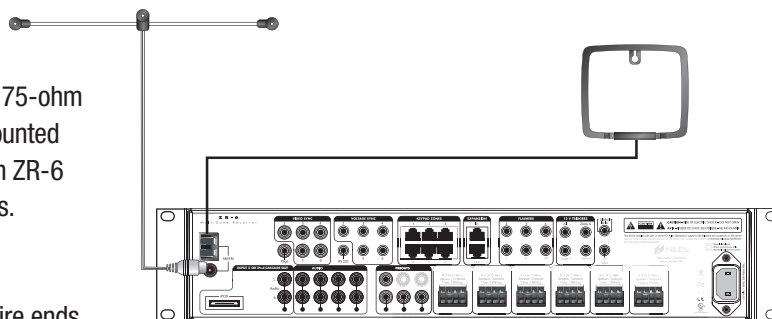


Figure 15. Connecting AM/FM Antennas to the ZR-6 MultiZone Receiver

CONNECT THE 12V OUTPUTS

The Global 12V output triggers an external device whenever any zone is active. The Zone 4, 5 and 6 12V Outputs trigger an external device whenever the respective zone becomes active. A common use would be to turn on a 12V trigger-equipped Niles Systems Integration Amplifier connected to the pre-amplifier outputs. The 12V outputs can also be used to trigger a Niles AC-3 Voltage-Triggered AC Power Strip (FG00242) to automate power turn-on and turn-off of connected sources.

(CONTINUED ON NEXT PAGE)

ZR-6 MULTIZONE RECEIVER SYSTEM INSTALLATION

CONNECT THE HT (HOME THEATER) SYNC IF NEEDED

If the ZR-6 MultiZone Receiver Kit is going to share audio source components with a separate home theater system, it is important to use the HT (home theater) sync. A voltage signal from the home theater receiver allows the ZR-6 MultiZone Receiver to know that the home theater receiver is on and may be utilizing connected sources. The ZR-6 MultiZone Receiver will not go into standby, even if all of its zones are shut off, until this voltage signal is no longer present. Use a 3.5 mm stereo plug (FG01019). One end connects to the HT Sync port on the ZR-6 MultiZone Receiver, the other end to a trigger output (or similar) on the home theater receiver. If a trigger output is not available on the home theater receiver, an alternate Niles CS12V Current Sensing 12V Trigger (FG01173). May be used when the power cord of the home theater receiver is connected to the current sensing outlet on the CS12V and the receiver is turned on, the CS12V sees the additional current draw and sends out a 12V trigger.

CONNECT THE EXTERNAL CONTROLLER

The ZR-6 MultiZone Receiver can be externally controlled in two ways: RS-232 and/or IR.

RS-232

The ZR-6 MultiZone Receiver is equipped with two-way RS-232 serial communication. This allows the receiver to be monitored and controlled by an external control system such as the Niles iC2 (FG01342). The RS-232 port uses a 3.5 mm stereo jack with standard TRS (Tip, Ring, Sleeve) configuration of Transmit, Receive, and Ground (**Figure 16**). The RS-232 control command protocols for the ZR-6 MultiZone Receiver are located in the **RS-232 Control Protocols** section.

IR INPUT

The ZR-6 MultiZone Receiver can be controlled by a programmable/learning IR remote control system. Connect a Niles IR sensor (several models available separately) to receive the IR signals from the IR remote control to the Global IR input. The discrete IR control codes for the ZR-6 MultiZone Receiver are available in several formats. See www.nilesaudio.com/techsupport.

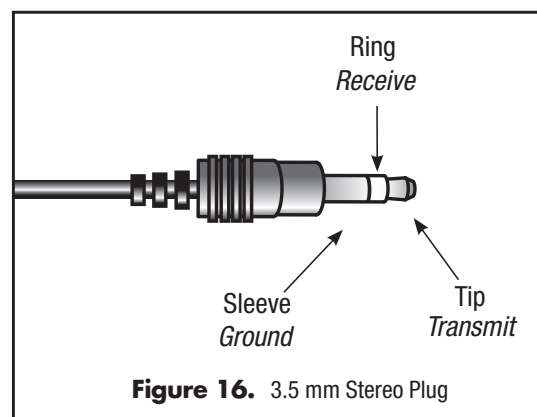


Figure 16. 3.5 mm Stereo Plug

CONNECT THE MAIN POWER CABLE

The ZR-6 MultiZone Receiver is equipped with an IEC Cable Connector. A supplied, removable power cable is attached to this two-pin Power Connector and then plugged into an AC wall outlet. This is the AC power disconnect for the ZR-6 MultiZone Receiver and should remain accessible during use. A high quality surge suppression device is recommended to protect the equipment from potentially harmful power surges and spikes.

WEATHER-RESISTANT KEYPAD INSTALLATION

GUIDELINES

The ZR-6 MultiZone Receiver requires at least one Master Keypad (Solo-6 IR or Solo-6 MD) in each active listening zone. Up to three keypads can be installed in each zone using the optional ZR-KE Keypad Expander (FG01494). The Numeric-6P Accessory Keypad can be combined with the Solo-6 IR keypad to provide even more functionality.

Keypads must be installed in an outlet box listed in accordance with the NEC. Keypads installed in damp or wet locations must be installed in boxes approved for the application. The keypads are weather-resistant from the front face when the wall plate is sealed to the wall with a silicone bead or other waterproof sealant. If the inside of the wall is a wet environment, it is recommended that all wiring utilize a drip loop to help prevent water from entering the back of the keypad. Do not submerge the keypad. In freezing temperatures, the keypad's IR sensor will have reduced range, but will recover when unfrozen. Do not install keypads in environments where the ambient temperature exceeds 100°C (212°F).

CHOOSE A MOUNTING LOCATION

Convenient keypad mounting locations include:

1. *Near a doorway*
2. *Near a desk*
3. *At your bedside*
4. *Close to a telephone*
5. *Near other wall-mounted controls.*

Keypad mounting considerations include:

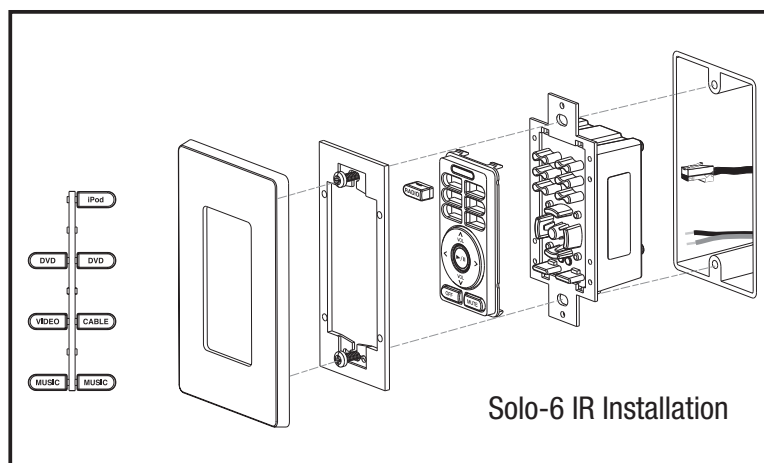
1. *Avoid direct sunlight*
2. *Accessibility for direct button operation*
3. *Line of site for IR operation*
4. *Close to a telephone*
5. *Appropriate height for display visibility*
6. *Accessibility for wiring (if retrofit)*

SOLO-6 IR

The Solo-6 IR comes in a kit that includes the keypad in white with a white faceplate. Also included are color change kits in light almond and bone. Optional kits are available in black (FG#01532) and silver (FG#01570). The color change kit must be installed prior to installation in the wall.

1. Gently compress the two retaining tabs at the top of the Decora insert, then lift the top. Remove the bottom of the Decora insert in the same manner. The main buttons will come off with the Decora insert and any installed Master Keys can now be easily removed.
2. To reinstall, snap the new Decora insert in place, making certain that the attached buttons are seated over the elastomer sub-buttons.
3. Do not install the Master Keys at this point. They should be installed after the keypad has been mounted in the wall. 4. Install the keypad into the wallbox using the 6-32 screws provided.

5. Install the wall plate two mounting bracket using the screws provided.
6. Snap the trim plate into place.
7. Test the button action and adjust as necessary for consistent operation.



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WEATHER-RESISTANT KEYPAD INSTALLATION

INSTALL THE SOLO-6 IR MASTER KEYS

Solo-6 IR Keypads are shipped with the Master Keys uninstalled. 14 Master Keys are included (seven different labels for the left side, seven different labels for the right side). To install the Master Keys:

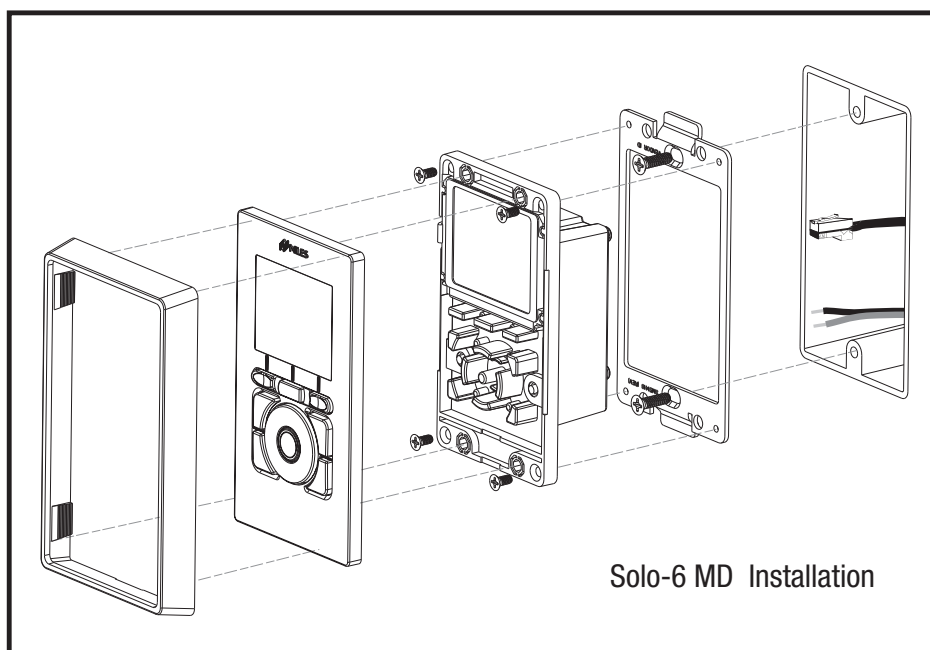
1. Remove a Master Key from the "tree". Note the difference between the left and right side versions. Be sure the keycaps break off cleanly. Remove any excess plastic material.
2. Insert the Master Key in the appropriate hole over the elastomer until you can feel it "click" when it is pushed in.
3. Do not remove the Decora insert to install the Master Key Labels, the key caps snap in place through the Decora insert.

Press the supplied screwless wallplate into place, making sure the Decora inserts are centered in the openings and flush with the wallplate. "Radio" is always top left (source 1). "iPod" is always top right (source 2).

SOLO-6 MD

The Solo-6 MD keypad kit includes the display keypad and faceplate kits in White, Bone and Light Almond. The faceplates have the button caps attached.

1. Install the keypad mounting bracket with the two 6-32 screws provided. Be careful not to over tighten the screws and distort the bracket.
2. Install the Solo-6 MD keypad using the four 4-40 countersunk screws provided. DO NOT press on the display. Over-tightening these screws can crack the bracket. They should be snug and flush with the surface.
3. Press the faceplate insert into place until it clicks. DO NOT press on the display. Check the operation of all the buttons and adjust as necessary for consistent and easy operation.
4. Push the outside bezel into place, pressing snugly against the wall.



WEATHER-RESISTANT KEYPAD INSTALLATION

NUMERIC-6P

The Numeric-6P comes in a kit that includes the keypad in white. A faceplate is not included. Included are color change kits in light almond and bone. The color change kit must be installed prior to installation in the wall.

1. Gently compress the two retaining tabs at the top of the Decora insert, then lift the top. Remove the bottom of the Decora insert in the same manner. The colored key caps will come off with the Decora insert.
2. To reinstall, snap the new Decora insert in place, making certain that the buttons are seated over the elastomer sub-buttons.
3. Test the button action and adjust as necessary for consistent operation.

CONNECT THE CAT-5 CABLE TO THE KEYPAD

Each keypad directly connects to the ZR-6 MultiZone Receiver by a “home run” of CAT-5 cable with RJ-45 connectors utilizing the T-568A wiring convention (**FIGURE 14**). The CAT-5 cable connects to the “System” jack on the back of the keypad. The Numeric-6P includes a cable to connect to the Solo-6 IR Keypad.

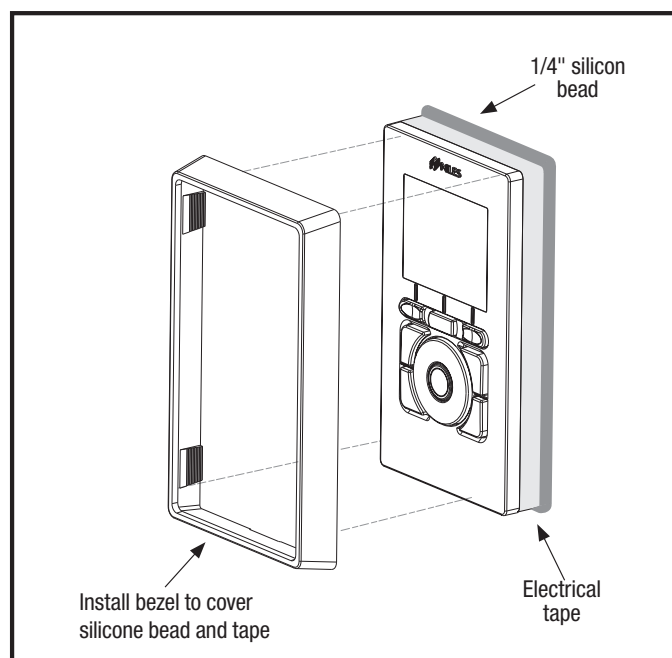
INSTALL THE KEYPADS INTO JUNCTION BOXES

The Solo-6 IR and Solo-6 MD Master Keypads mount into a standard single-gang in-wall junction box. If the Numeric-6P Accessory Keypad is to be added to the Solo-6 IR, a two-gang junction box is necessary.

INSTALL THE KEYPAD IN WET AREAS

The Solo-6IR and Solo-6MD keypad feature a true weather-resistant design, opening up the possibilities for installation in moist areas such as bathrooms, saunas, or in covered outdoor areas like patios. However, in these applications special care must be taken to properly seal the front of the keypad so moisture does not permeate the back of the keypad, which is not weather resistant. If the keypad is sealed properly, you can expect consistent and long-lived operation in environments where normal keypads are simply not designed to function. To install the keypad in a moist area, follow the normal installation procedure, but add these two very important steps:

1. Remove the front bezel (if already installed) and wrap the installed keypad all the way around with electrical tape, keeping the tape approximately 1/16” from the front edge of the keypad. This edge can be trimmed with a razor knife after wrapping the tape.
2. Apply a 1/4” bead of silicone to seal the tape to the wall.
3. Install the front bezel to cover the tape and the bead of silicone.



CONFIGURING THE ZR-6 MULTIZONE RECEIVER

The Niles ZR-6 MultiZone Receiver is simple to configure using the front panel buttons and LCD display. No computer is necessary.

NOTE: THE ZR-6, THE SLAVE ZR-6 (IF APPLICABLE), ALL SOURCE DEVICES, KEYPADS AND SPEAKERS MUST BE CONNECTED PRIOR TO PERFORMING ANY OF THESE OPERATIONS.

MAIN POWER

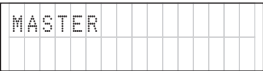
The ZR-6 MultiZone Receiver has a mechanical latching main power switch on its front panel. The ZR-6 and its accessories will not work until it has been engaged. Press in the Main Power switch to the on position. It is illuminated with LEDs to indicate that it is on and ready to operate.

ENTERING THE CONFIGURATION MODE

To enter configuration mode, power down the ZR-6 MultiZone Receiver(s) by disengaging the Main Power switch for five seconds and then power it up again while simultaneously holding down the Band and Set buttons. Release the Band and Set buttons when [RELEASE BUTTONS TO CONTINUE] appears on the display.



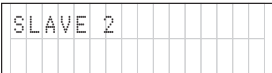
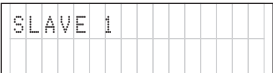
[MASTER] will be on the display. If there are multiple ZR-6 MultiZone Receivers, repeat the above step on each unit. [MASTER] will appear on the display of all units.



MASTER/SLAVE

When a ZR-6 system is expanded to include more zones (up to 18 zones with three receivers), each chassis must have a unique name: Master, Slave 1, or Slave 2. There can only be one Master MultiZone Receiver.

When a second ZR-6 MultiZone Receiver is used as a Slave, press the Band button once. [MASTER] will change to [SLAVE 1]. If there is a third ZR-6 MultiZone Receiver that is used as a Slave, pressing the Band button one more time changes the display to [SLAVE 2] for that unit.



On each Slave ZR-6 MultiZone Receiver, hold down the Band and Set buttons to save the change. [RELEASE BUTTONS TO CONTINUE] will appear on the display. The Slave ZR-6 MultiZone Receiver(s) will return to the normal operating mode.

All other configuration settings will be performed on the Master ZR-6 MultiZone Receiver only.

To continue to the first configuration step on the Master ZR-6 MultiZone Receiver, Zone Linking, press the Set button once.

To save the settings and exit the configuration mode, hold down the Band and Set buttons. After the Master ZR-6 MultiZone Receiver saves the settings [RELEASE BUTTONS TO CONTINUE] appears on the display. The Master ZR-6 MultiZone Receiver will return to the normal operating mode.

TECH TIP

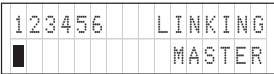
All external IR and RS-232 control connections must be made to the Master ZR-6 MultiZone Receiver, and not to the Slave(s). The commands used to control the Slave(s) are relayed through the Expansion Ports. All MicroFlashers for source device control must be connected to the Master ZR-6 MultiZone Receiver, and not the Slave(s). IR from the keypads to the Slave(s) is routed to the Master through the Expansion Ports

ZONE LINKING

This feature allows two or more zones to always play the same source at the same time. Volume, bass, treble, and mute functions will remain independent for each zone.

NOTE: ONLY ONE ZONE LINKING GROUP MAY BE CREATED PER CHASSIS (ONE FOR THE MASTER, ONE FOR EACH OF THE SLAVES).

While in the configuration mode (see above), press the Set button until [123456 LINKING MASTER] shows in the display.



The numbers represent the 6 zones of the ZR-6 Multizone Receiver. A cursor will be blinking under the number "1" or "Zone 1." Press the + button and the - button to toggle the cursor between

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CONFIGURING THE ZR-6 MULTIZONE RECEIVER

Press the **Band** button to toggle the “Y” on or off in the highlighted zone. Only zones with a “Y” will respond to whole house turn on.

1	2	3	4	5	6			PARTY	
Y	Y	Y						MASTER	

NOTE: IN THIS EXAMPLE ZONES 1, 2 AND 3 ARE CONFIGURED FOR PARTY MODE.

After “6” on the Master, it will toggle to “1” on the first connected Slave. After “6” on the last connected Slave it will toggle back to “1” on the Master.

Repeat these steps until all of the desired zones have been set for the desired Party mode operation.

To continue to the next system configuration step, **PAGE MODE VOLUME**, press the **Set** button once.

To save the settings and exit the configuration mode, simultaneously hold down the **Band** and **Set** buttons. After the ZR-6 saves the information, **[RELEASE BUTTONS TO CONTINUE]** appears on the display. The ZR-6 will return to the normal operating mode.

PAGE MODE VOLUME

The paging volume level for the selected zones is adjustable. Since the paging volume level will be the same for all zones, we suggest setting a comfortable level in the room that will be used most frequently, or in the smallest room. While in the configuration mode (see above), press the **Set** button until **[PAGE MODE VOLUME = XX]** shows in the display.

PAGE	MODE								
VOLUME	=	60							

Press the **+** button to increase the paging volume. Press the **-** key to decrease the paging volume. The factory default setting is **60**. The volume range is from **0** to **99**.

PAGE	MODE								
VOLUME	=	34							

To continue to the next system configuration step, **Zone 4 Pre-Out**, press the **Set** button once.

To save the settings and exit the configuration mode, simultaneously hold down the **Band** and **Set** buttons. After the ZR-6 saves the information, **[RELEASE BUTTONS TO CONTINUE]** appears on the display. The ZR-6 will return to the normal operating mode.

ZONE 4 PRE-OUT

The ZR-6 MultiZone Receiver is equipped with Zone 4 pre-amplifier outputs that enable the use of a separate outboard power amplifier.

While in the configuration mode (see above), press the **Set** button until the display shows **[ZONE 4 PRE-OUT VARIABLE]**. The default setting is for the preamplifier outputs to be variable (the output level is controlled by the ZR-6 volume control).

ZONE	4	PREOUT							
VARIABLE									

To change these outputs to a fixed volume level, press the **Band** button. The display will show **[PRE-OUT 4 FIXED]**. The Zone 4 Output is now set to +6dB relative to the selected source device input level.

ZONE	4	PREOUT							
FIXED									

To continue to the next system configuration step, **Zone 5 Pre-Out**, press the **Set** button once.

To save the settings and exit the configuration mode, simultaneously hold down the **Band** and **Set** buttons. After the ZR-6 saves the information, **[RELEASE BUTTONS TO CONTINUE]** appears on the display. The ZR-6 will return to the normal operating mode.

CONFIGURING THE ZR-6 MULTIZONE RECEIVER

ZONE 5 PRE-OUT

The ZR-6 MultiZone Receiver is equipped with Zone 5 pre-amplifier outputs that enable the use of a separate outboard power amplifier.

While in the configuration mode (see above), press the **Set** button until the display shows **[ZONE 5 PRE-OUT VARIABLE]**. The default setting is for the preamplifier outputs to be variable (controlled by the ZR-6 volume control).

ZONE 5 PREOUT									
VARIABLE									

To change these outputs to a fixed volume level, press the **Band** key. The display will show **[PRE-OUT 5 FIXED]**. The Zone 5 Output is now set to +6dB relative to the selected source input level .

ZONE 5 PREOUT									
FIXED									

To continue to the next system configuration step, *Zone 6 Pre-Out*, press the **Set** button once.

To save the settings and exit the configuration mode, simultaneously hold down the **Band** and **Set** buttons. After the ZR-6 saves the information, **[RELEASE BUTTONS TO CONTINUE]** appears on the display. The ZR-6 will return to the normal operating mode.

ZONE 6 PRE-OUT

The ZR-6 MultiZone Receiver is equipped with Zone 6 pre-amplifier outputs that enable the use of a separate outboard power amplifier.

While in the configuration mode (see above), press the **Set** button until the display shows **[ZONE 6 PRE-OUT VARIABLE]**. The default setting is for the preamplifier outputs to be variable (controlled by the ZR-6 volume control).

ZONE 6 PREOUT									
VARIABLE									

To change these outputs to a fixed volume level, press the **Band** button. The display will show **[PRE-OUT 6 FIXED]**. The Zone 6 Output is now set to +6dB relative to the selected source input level.

ZONE 6 PREOUT									
FIXED									

To continue to *NAMING THE SOURCE DEVICES*, press the **Set** button once.

To save the settings and exit the configuration mode, simultaneously hold down the **Band** and **Set** buttons. After the ZR-6 saves the information, **[RELEASE BUTTONS TO CONTINUE]** appears on the display. The ZR-6 will return to the normal operating mode.

NAMING THE SOURCE DEVICES

While in the configuration mode, press the **Set** button until the display shows **[SOURC NAME]**. Press the **Band** button to highlight a source number. The numbers indicate the six sources of the ZR-6 MultiZone Receiver. The cursor will return to Source 2 after Source 6. You cannot re-name Source 1 because it is always the built-in AM/FM tuner. The default name for Source 2 is **iPod**.

3456	SOURC NAME								
IPOD									

If an iPod will not be used with the system, select a name for the source device 2. If iPod remains as the Source 2 name and no iPod is connected, whenever Source 2 is chosen **[IPOD DISCONNECTED]** will appear on the screen.

Press the **Band** button to highlight the source number. The cursor moves to the next source as you press the **Band** button, returning to Source 2 after Source 6. With a source number highlighted, toggle through the available source device names by pressing the **+** and **-** buttons.

2456	SOURC NAME								
SAT RADIO									

The source device name that is selected is the name that will appear on the LCD displays of Solo-6 MD Master Keypads whenever that source is selected. There are 35 source device names available. They appear in alphabetical order, except N/A which appears first, and iPod which appears first for Source 2 only.

CONFIGURING THE ZR-6 MULTIZONE RECEIVER

Available source device names:

Radio (default <i>Source 1</i>)		iPod (default <i>Source 2</i>)	
• N/A	• CD Ch 3	• HDTV	• SAT TV 2
• Blu-ray	• DMS	• MP3	• SAT TV 3
• Cable	• DMS 2	• DVD Ch 2	• TV
• Cable 2	• DMS 3	• Music	• TV 2
• Cable 3	• DMS 4	• Music 2	• Video
• CD	• DVD	• PC	• Video 2
• CD 2	• DVD 2	• SAT Radio	
• CD 3	• DVD Ch	• SAT Radio 2	
• CD Ch	• DVD Ch 2	• SAT TV	
• CD Ch 2	• DVR		

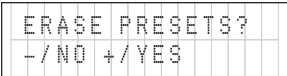
The corresponding Solo-6 MD Master Keypad screen displays are shown in an appendix at the end of this document.

To continue to the next configuration step, *ERASING TUNER PRESET INFORMATION*, press the **Set** button.

To save the settings and exit configuration mode, simultaneously hold down the **Band** and **Set** buttons. After the ZR-6 saves the information, **[RELEASE BUTTONS TO CONTINUE]** appears on the display. The ZR-6 will return to the normal operating mode.

ERASING TUNER PRESET INFORMATION

While in configuration mode, press the **Set** button until the display shows **[ERASE PRESETS?]**



Press **+** to erase all 20 tuner presets stored into the ZR-6. The display will show **[PRESETS ERASED]**.



Press the **–** button to exit and move to the next step without erasing any of the presets.

To continue to the next configuration step, *RESTORING FACTORY DEFAULTS*, press the **Set** button.

To save the settings and exit configuration mode, simultaneously hold down the **Band** and **Set** buttons. After the ZR-6 saves the information, **[RELEASE BUTTONS TO CONTINUE]** appears on the display. The ZR-6 will return to the normal operating mode.

RESTORING THE FACTORY DEFAULTS

While in configuration mode, press the **Set** button until **[FACTORY RESET]** appears on the display.



Press **+** to erase all configuration data. All Master/Slave, zone linking, paging, party mode, bass, treble, and loudness settings will return to the factory default. The display will show **[CONFIRM ERASE]**.



Press the **+** button to confirm the erase procedure. The display will show **[MASTER DEFAULT RESTORED]**.



Press the **–** button (at either screen) to exit and move to the next step without erasing any information.

To continue to the first configuration step, *MASTER/SLAVE*, press the **Set** button.

To save the settings and exit configuration mode, simultaneously hold down the **Band** and **Set** buttons. After the ZR-6 saves the information, **[RELEASE BUTTONS TO CONTINUE]** appears on the display. The ZR-6 will return to the normal operating mode .

PROGRAMMING SOURCE DEVICE IR COMMAND CODES

OVERVIEW

By default, the connected keypads and the R-8L hand-held remote will control source selection, AM/FM tuner functions, iPod functions, zone volume level, and on/off for the zone and system. To enable full control of any other connected source devices, the IR command codes for these source devices must be learned and stored in the ZR-6 MultiZone Receiver. The keypads and R-8L hand-held remote will then control the source devices by sending the IR command codes stored in the ZR-6 MultiZone Receiver through MicroFlashers attached to the source devices.

HOW IR COMMAND CODES ARE ENTERED AND STORED

The source device IR command codes are entered in the ZR-6 MultiZone Receiver using the source device factory remote controls. The ZR-6 supplies each source device with a memory page to store its IR command codes. The individual command codes (Play, Pause, etc.) are stored in memory cells within each page, pre-labeled to match the commands available on the R-8L remote control.

LIBRARY 1 AND VS-6/LIBRARY 2

In addition to the five source device IR storage pages, the ZR-6 MultiZone Receiver provides two additional areas to store IR command codes: Library 1 or the VS-6/Library 2. The Libraries are typically used to store the IR command codes from non-source devices such as draperies, television lifts, or other codes that the installer prefers to be easily accessible. By default, Library 1 is empty and Library 2 is filled with the IR command codes for the Niles VS-6 Component High Definition Video Switcher (see VS-6 IR Command Set section). If a VS-6 is not being used, new IR command codes can be learned in place of these.

IR COMMAND CODE PROGRAMMING PROCEDURE

The source device IR command code programming is organized into source device memory pages, and then command code memory cells within the memory pages.

The source device memory pages appear in this order:

- Page 1 Source 2 (Only if a source name other than "iPod or "N/A" was specified in "Naming Source Devices"
- Page 2 Source 3
- Page 3 Source 4

- Page 4 Source 5
- Page 5 Source 6
- Page 6 Library 1
- Page 7 Library 2

Additional pages are supplied for building IR command sequences:

- Page 8 Tuner
- Page 9 Source 2 (iPod)
- Page 10 Source 3
- Page 11 Source 4
- Page 12 Source 5
- Page 13 Source 6

The command code memory cells appear in this order:

- Power ON
- Power OFF
- Play
- Pause
- Stop
- Fast Forward
- Rewind
- Record
- Next
- Previous
- Up
- Down
- Left
- Right
- OK (select)
- #1
- #2
- #3
- #4

(CONTINUED ON NEXT PAGE)

PROGRAMMING SOURCE DEVICE IR COMMAND CODES

- #5
- #6
- #7
- #8
- #9
- #0
- Enter
- Channel Up
- Channel Down
- Last
- Menu
- Guide
- info
- List
- Exit
- Red
- Green
- Yellow
- Blue
- Input
- Replay
- Disc
- Page Up
- Page Down
- Live
- Fav
- Random
- Group

The command list is looped so that pressing Previous with “Power ON” in the display moves to “Group”.

CONSIDERATIONS:

- All zones should be off before entering programming mode.
- It is not necessary to learn all devices, or all commands for any device.
- Pages for devices not named in the “Source Naming” configuration will not appear when learning IR codes.
- Pressing the Program button at any time will move to the next memory page (source device, library or sequence). Any commands stored on that page will be saved before moving to the next page.
- Pressing the Previous and Next (or the + and -) buttons move through the options within a memory page.
- Pressing-and-holding the Program button at any time while in programming mode will exit programming mode. Any commands stored prior will be saved.
- The source device factory remote controls must be in working order and have fresh batteries in order to learn IR codes properly.
- The learning capacity for each memory page (source, or library) is approximately 42 to 75 commands, depending on the complexity of the commands being learned
- Certain device functions cannot be learned, including multi-frequency codes, some high frequency codes and other unusual formats. An “IR INVALID” message will appear on the display should one of these codes be encountered.
- For best results, avoid high levels of ambient light, such as natural sunlight or fluorescent lighting.
- For future reference, it is recommended that the learned IR command information be recorded on the forms provided in the Appendix.

PROGRAMMING SOURCE DEVICE IR COMMAND CODES

TO LEARN SOURCE DEVICE COMMANDS

1. To enter the IR programming mode, all zones should be off. Press-and-hold the **Program** button on the installer configuration panel for two seconds.



2. The display will show **[PROGRAMMING MODE]** and then change to **[LEARN SOURCE 3 POWER ON]**. “Source 3” in the display will be replaced by the previously selected source device name from the configuration process. Source 2 will appear only if a name other than “N/A” or “iPod” was selected for the Source 2 device name. The “Enter IR” LED will illuminate.
3. With **[LEARN SOURCE 3 POWER ON]** shown in the display, press the source device factory remote’s **Power On** button (or Power toggle if there are no discrete power commands) while pointing the remote at the IR receiver on the installer configuration panel from about two inches away. The “Enter IR” LED will turn off.

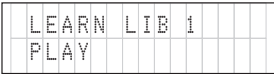
NOTE: IF ANY RECEIVED IR COMMAND CANNOT BE CORRECTLY PROCESSED, OR IS CORRUPT FOR ANY REASON, [IR INVALID] WILL APPEAR ON THE DISPLAY.

4. Press the **Test IR** button to verify that the source device power on command was properly learned. The IR command will be emitted from the respective IR output on the back of the ZR-6 MultiZone Receiver. Source 3 commands are emitted from MicroFlasher output 3, source 4 commands from MicroFlasher output 4, and so on. If the source device does not respond correctly, press the **Next** button then the **Previous** button to display **[LEARN SOURCE 3 POWER ON]** and to illuminate the “Enter IR” LED. (The ZR-6 can only learn command codes when “Enter IR” LED is illuminated).
5. Press the **Next** button to proceed to the next command: **[LEARN SOURCE 3 POWER OFF]**. Follow steps 3 and 4, substituting Power Off for Power On.
6. Press the **Next** button to proceed to the next command. The commands will appear in the order listed above. If a particular command is not necessary, skip to the next appropriate command by pressing **Next** button (or the **Previous** button to go back to a command). The **+** and **-** buttons can also be used.

7. Continue until all commands for this source device have been learned.
8. Press the **Program** button to proceed to the next source device memory page.
9. Follow the same procedure until all of the command codes for all source devices have been entered.
10. After learning the command codes for source device 6, press the Program button to advance to learning codes for Library 1.

STORING IR COMMANDS IN LIBRARY 1

Libraries are typically used to store the IR command codes from non-source devices such as draperies, television lifts, or other codes that the installer prefers to be easily accessible. The procedure for storing IR command codes in Library 1 is the same as storing IR command codes in the source device memory pages, with one difference: the command codes for Power On and Power Off are eliminated. The first command code to be learned will be Play.



NOTE: IF ANY RECEIVED IR COMMAND CANNOT BE CORRECTLY PROCESSED, OR IS CORRUPT FOR ANY REASON, [IR INVALID] WILL APPEAR ON THE DISPLAY

STORING IR COMMANDS IN VS-6/LIBRARY 2

The VS-6/Library 2 includes all of the command codes necessary to control a Niles VS-6 Component High Definition Video Switcher when installed with a ZR-6. See the Appendix for the complete list of VS-6 command codes and the respective Niles R-8L remote control keys used to recall these codes when building sequences. If a Niles VS-6 is not being installed with the ZR-6, new command codes can be learned over the stored VS-6 command codes. Restoring the ZR-6 to factory default condition restores all of the VS-6 codes.

The procedure for storing IR command codes in VS-6/Library 2 is the same as storing IR command codes in the source device memory pages, with one difference: the command codes for Power On and Power Off are eliminated. The first command code to be learned will be Play.

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PROGRAMMING SOURCE DEVICE IR COMMAND CODES

LEARN	VS-6								
PLAY									

NOTE: IF ANY RECEIVED IR COMMAND CANNOT BE CORRECTLY PROCESSED, OR IS CORRUPT FOR ANY REASON, [IR INVALID] WILL APPEAR ON THE DISPLAY

BUILDING IR SEQUENCES FOR SOURCE DEVICES

Sequences issue a specific set of IR commands each time a source is selected.

Some uses for sequences might be:

- A specific disc is played when the CD is selected.
- The tuner always tunes to a certain preset when it is selected.
- Selecting the DVD can turn on the TV and close the draperies.

NOTE: IF A SELECTED SOURCE IS ALREADY PLAYING IN ANOTHER ZONE, THE SEQUENCE WILL NOT BE ISSUED.

TO BUILD A SEQUENCE FOR A SOURCE DEVICE

1. Press each Function button on the Niles R-8L remote that corresponds to each command of the start-up sequence for the Tuner, in the order the commands will occur.

NOTE: PRESS THE APPROPRIATE SOURCE BUTTON BEFORE PRESSING THE FUNCTION BUTTON TO SPECIFY WHICH DEVICE COMMANDS ARE USED.

PROG	TUNER			01					
BUILD	SEQUENCE								

2. To add a function from Library1 or the VS-6 Library, press the respective Library button prior to pressing each function button.
3. The “Enter IR” LED will blink as each command is received, and the display number will increment up to indicate the current step number. Sequences may have up to 64 steps.

PROG	TUNER			02					
BUILD	SEQUENCE								

4. To insert delays, use the Volume + or – buttons. (Volume –=.5 sec, Volume += 1 sec.) When adding a delay the display will show the cumulative delay amount in this step.

PROG	TUNER			03					
DELAY		1.5	S						

5. Press Program at any time to move to the next memory page. Sequences are built for each source in order, and then the menu returns to the IR learning page for source 3.
6. Repeat these steps for each source that is to have a start-up command sequence.

IR PROGRAM EDITING AND ERASING

EDITING OR ERASING INDIVIDUAL IR COMMANDS.

1. While in programming mode, press **Program** until the desired source device memory page is displayed.

LEARN	SOURCE	3							
POWER	ON								

2. To edit or erase the Power On Command:
 - a. To re-learn the command, follow steps 3 and 4 in the section “**To Learn Source Device Commands**”.
 - b. To erase the Power On command for this source, press the **Erase** button. [ERASE COMMAND -/NO +/YES] will appear on the display.

ERASE	COMMAND								
-/NO	+/YES								

- i. Press + to erase the command. The display will return to the [TEACH POWER ON] screen.
- ii. Press – to exit the option without erasing the command. The display will return to the [TEACH POWER ON] screen.

PROGRAMMING SOURCE DEVICE IR COMMAND CODES

- 3. Press the **Next** button to proceed to the next command code. Follow steps 1 and 2 above for each command code that is to be edited or erased.
- 4. Press the **Program** button to advance to the next source device to be edited.

ERASING INDIVIDUAL DEVICE SEQUENCES

- 1. While in programming mode, press the **Program** button until the desired source sequence page is shown on the display.

PROG	TUNER	01	
BUILD	SEQUENCE		

- 2. To erase the sequence for the displayed device, press the **Erase** button.
- 3. The display will show **[ERASE SEQUENCE -/NO +/YES]**

ERASE	SEQUENCE		
-/NO	+/YES		

- 4. Press the **+** button to erase the sequence. The sequence that was previously stored in this location is now erased.
- 5. Press the **-** button to exit erase mode and return to the previous step without erasing the sequence.

ERASING ALL IR COMMAND AND SEQUENCE PROGRAMMING FOR ONLY ONE SOURCE

- 1. While in the Programming mode, press **Program** until the desired source device name is displayed with **[TEACH POWER ON]** or if a library page **[ENTER NILES]**

PROG	SOURCE	3	
TEACH	POWER ON		

- 2. Press-and-hold the **Program** and **Erase** buttons.

- 3. The display will show **[ERASE ALL IR+SEQ "SRC 3" -/NO +/YES]**

ERASE	ALL	IR+SEQ	
LIB 1	-/NO	+/YES	

- 4. Press **+** to erase the commands and sequences for the selected device. The commands and sequences that were previously stored in this location are now erased.
- 5. Press **-** to exit erase mode and return to the previous step without erasing the commands and sequences.
- 6. Continue erasing or press-and-hold the **Program** button to exit IR Programming mode.

ERASING IR AND SEQUENCE PROGRAMMING FOR ALL SOURCES

- 1. While in the programming mode, press-and-hold the **Program**, **Next** and **Erase** buttons until the display shows **[ERASE ALL IR+SEQ PRGRM -/NO -/YES]**.

ERASE	ALL	IR+SEQ	
PRGM	-/NO	+/YES	

- 2. Press the **+** button to erase all IR commands and sequences. All commands and sequences that were previously stored in the ZR-6 are now erased.
- 3. Press **-** button to exit erase mode and return to the previous step without erasing any commands and sequences.
- 4. Press-and-hold the **Program** button to exit IR Programming mode.

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ARCHIVING AND OR UPDATING THE ZR-6 MULTIZONE RECEIVER

From time to time, new firmware revisions may be made available to add features or update operation. Also, configuration data stored in the ZR-6 MultiZone Receiver can be saved to the computer. This data can then be used to restore all the data in a ZR-6 in case of a loss, or to "clone" the ZR-6 in situations where the same features are desired in multiple units.

Archiving will save and restore the following:

- ZR-6 configuration data
- Learned IR commands and sequences
- Source level adjustments
- Zone bass, treble and turn-on volume settings

UPDATING THE ZR-6 MULTIZONE RECEIVER FIRMWARE

The Archive/Update software can be downloaded from www.nilesaudio.com/techsupport.

To archive data or update firmware in the ZR-6:

1. Download the latest firmware versions for the ZR-6, Solo-6 IR and Solo-6 MD keypads from www.nilesaudio.com/techsupport. The update software and firmware is bundle together. Save the software on the computer to be used.
2. Each chassis in a Master/Slave system will require firmware updating. They can be updated in any order. The keypads are only updated from the Master chassis.
3. Activate the front RS-232 port (located behind the Programming Panel) by moving the slide switch from "Normal" to the "Archive/Update" position. This disables the RS-232 mini-jack on the rear panel.
4. Connect the computer to the RS-232 port with a serial cable using a DB-9 connector.
5. Open the Archive/Update software and follow the directions.
6. Once archiving and/or updating of the system is complete, enable the rear panel RS-232 connection by moving the slide switch back to the "Normal" position.

SETTING UP THE AM/FM TUNER:

The built-in tuner can store up to twenty presets in any combination of **AM** or **FM** stations. In **Master/Slave** configurations, each tuner could store different presets providing a system total of 60. However, each keypad can only operate the tuner in the ZR-6 MultiZone Receiver to which it is connected, so each zone has access to 20 presets.

TO STORE PRESETS IN THE TUNER:

Press the **Band** button to choose between **AM** or **FM**. The display will show **AM** or **FM** to indicate the current band along with the current station [**AM560**].

AM	5	6	0												

Press the **+** or **-** button to tune to the desired station. Each press and release will increment the tuner frequency up or down. A press-and-hold initiates the seek function. The tuner will move up or down to the next station with a clear signal. Continuing to hold the button will cause the tuner to pause at any station for 3 seconds before seeking the next station. Releasing the button will stop the seek function and the tuner will remain on the last tuned station.

FM	9	3	.	1											

Once the desired station is displayed, press-and-hold the **Set** button (2 seconds). The display will change to [**PRESET XX SAVE**] where XX is the next available open preset.

FM	9	3	.	1											
PRESET	0	1			SAVE										

Press the **+** or **-** buttons until the desired preset location is displayed (01 – 20). It will always stop at the first available blank preset. Press the **+** or **-** button to overwrite any previously saved preset.

FM	9	3	.	1											
PRESET	0	1													

NOTE: IF THE SELECTED PRESET ALREADY HAS A STATION ASSIGNED, IT WILL BE OVERWRITTEN AND THE NEW STATION WILL NOW BE STORED IN THAT PRESET LOCATION.

Press-and-hold the **Set** button for 2 seconds. This will save the station in the displayed preset location. The ZR-6 MultiZone Receiver will return to normal operation. The display will show the station and the preset.

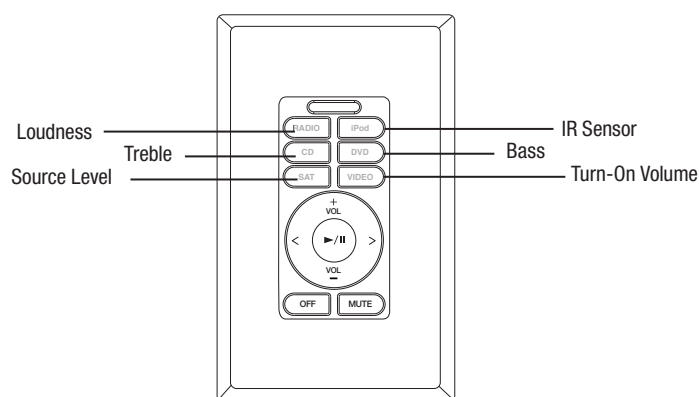
FM	9	4	.	9											
PRESET	2														

Repeat these steps until all desired stations are preset or the available twenty presets are filled.

Presets may be erased one of two ways: by storing a new preset in the location; or by entering configuration mode and electing to erase all presets (see “**Erasing Tuner Preset Information**”).

SETTING UP THE ZONE KEYPADS

THE SOLO-6 IR KEYPAD



SOURCE DEVICE LEVEL ADJUSTMENT

Often, source devices will have different volume output levels. The Solo-6 IR includes an adjustment to match the volume levels of the connected source devices so when a source is changed the volume level stays constant. This volume level adjustment is global and must be performed in only one zone.

To set the Source Device Levels:

1. Simultaneously press-and-hold the **Mute** key and the **Master** key 5 (bottom left) for five seconds.
2. The AM/FM tuner will start playing in the zone. The **Radio** button will blink slowly.
3. Select the next source device to adjust by pressing the appropriate Source key. The selected source key will blink slowly.
4. Press the **Vol +** key to raise the volume level of the selected source device. Press the **Vol -** key to lower the volume level of the source device.
5. Press the **Play/Pause** key to reset the source device level adjustment to zero.
6. Repeat these steps for each source device connected to the system. Change sources as often as necessary to adjust all the volume levels to be equal.
7. To save your changes and exit the configuration mode, simultaneously press-and-hold the **Mute** key and the **Master** key 5 (bottom left) for five seconds. The system will return to the normal operating mode.

ZONE TURN ON VOLUME LEVEL

A source device should be playing in the zone. By default, each zone will turn on at the last played volume level. If preferred, each zone can be configured to always turn on at the same volume level, regardless of the last played volume.

To set the Zone Turn-on Volume Level:

1. Simultaneously press-and-hold the **Mute** key and the **Master** key 6 (bottom right) for five seconds. The **Master** key 6 LED will start blinking.
2. Press the **Vol +** key to increase the turn-on volume in that zone, or press the **Vol -** key to decrease the turn-on volume.
3. To reset the zone to turn on to the “Last Played Volume” (the default configuration), press-and-hold the **Play/Pause** key for five seconds. The Solo-6 IR keypad will return to the “Last Played Volume” configuration.
4. To save your changes and exit the configuration mode, simultaneously press-and-hold the **Mute** key and the **Master** key 6 for five seconds. The system will return to the normal operating mode.
5. Repeat these steps for the remaining zone keypads.

BASS ADJUSTMENT

A source device should be playing in the zone.

To set the Bass Adjustment:

1. Simultaneously press-and-hold the **Mute** key and the **Master** key 4 (middle right) for five seconds. The **Master** key 4 LED will start blinking.
2. Press the **Vol +** key to increase the bass, or the **Vol -** key to decrease the bass.
3. To reset the bass to its default flat setting, press-and-hold the **Play/Pause** key for five seconds.
4. To save your changes and exit the configuration mode, simultaneously press-and-hold the **Mute** key and the **Master** key 4 for five seconds. The system will return to the normal operating mode.
5. Repeat these steps for the remaining zone keypads.

SETTING UP THE ZONE KEYPADS

TREBLE ADJUSTMENT

A source device should be playing in the zone.
To set the Treble Adjustment:

- 1. Simultaneously press-and-hold the **Mute** key and the **Master** key 3 (middle left) for five seconds. The **Master** key 3 LED will start blinking.
- 2. Press the **Vol +** key to increase the treble, or the **Vol –** key to decrease the treble.
- 3. To reset the treble to its default flat setting, press-and-hold the **Play/Pause** key for five seconds.
- 4. To save your changes and exit the configuration mode, simultaneously press-and-hold the **Mute** key and the **Master** key 3 for five seconds. The system will return to the normal operating mode.
- 5. Repeat these steps for the remaining zone keypads.

IR SENSOR ON/OFF

By default, the IR sensor is set to the on position.
To turn the Internal IR Sensor On or Off:

- 1. Simultaneously press-and-hold the **Mute** key and the **Master** key 2 (top right) for five seconds. The **Master** key 2 LED will start blinking.
- 2. Press the **Vol +** key to turn the IR sensor on. Press the **Vol –** key to turn the IR sensor off.
- 3. To save your changes and exit the configuration mode, simultaneously press-and-hold the **Mute** key and the **Master** key 2 for five seconds. The system will return to the normal operating mode.
- 4. Repeat these steps for the remaining zone keypads.

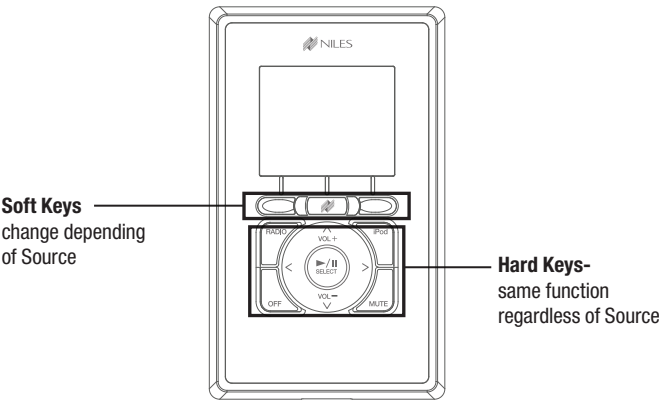
VARIABLE LOUDNESS ON/OFF

By default, the variable loudness is set to the on position.
To turn the zone’s Variable Loudness On or Off:

- 1. Simultaneously press-and-hold the **Mute** key and the **Master** key 1 (top left) for five seconds. The **Master** key 1 LED will start blinking.
- 2. Press the **Vol +** key to turn the variable loudness on. Press the **Vol –** key to turn the variable loudness off.

- 3. To save your changes and exit the configuration mode, simultaneously press-and-hold the **Mute** key and the **Master** key 2 for five seconds. The system will return to the normal operating mode.
- 4. Repeat these steps for the remaining zone keypads.

SOLO-6 MD KEYPAD



TECH TIP

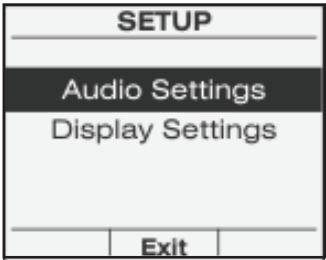
The Solo-6 MD features a combination of hard and soft keys. A hard key performs a single function regardless of source device. For example, the Radio key always selects the radio to play. Soft keys are different. The Solo-6 MD has three soft keys located just below the LCD screen. Except the middle key, which has the Niles logo, the soft keys are unlabeled. The label for each soft key is in the LCD screen directly above and it changes based on the menu or operation mode the keypad is in.



KEYPAD SETUP

To enter the Keypad Setup mode:

- 1. Press-and-hold the **Niles** logo soft key (the middle key below the display) for three seconds. The Setup screen will appear.
- 2. Press the **Vol +** and **Vol –** keys to scroll through and highlight the menu options: “Audio Settings” and “Display Settings.”



(CONTINUED ON NEXT PAGE)

SETTING UP THE ZONE KEYPADS

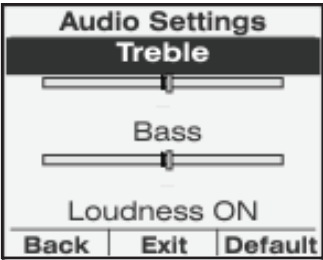
Press the **Play/Pause/Select** key to select the highlighted menu option.

3. Press the **Exit** soft key to return to the previous mode.

AUDIO SETTINGS

A source device should be playing in the zone. To adjust the Audio Settings:

- 1. Select "Audio Settings" from the main setup menu. The audio settings menu will appear on the screen. The **Back** soft key returns to the previous menu. The **Exit** soft key exits all setup menus and returns to the "Now Playing" screen.
- 2. Press the **Vol +** and **Vol -** keys to scroll through the menu options and highlight the desired function: "Treble," "Bass," or "Loudness."
- 3. When "Treble" or "Bass" are highlighted, adjust the respective level using the **<** and **>** keys. The current level is indicated by the sliding bar graph. Press the **Default** soft key to reset the highlighted tone control to its center, neutral setting.
- 4. When "Loudness" is highlighted, toggle between on or off with the **<** and **>** keys. The default setting for loudness is on.



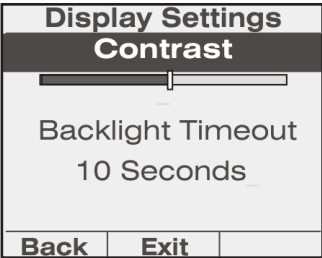
DISPLAY SETTINGS

The keypad display's backlight will turn off after the elapsed time selected in this configuration menu. However, the keypad buttons are always active, even when the backlight is off. Pressing any key activates the backlight, restarts the timeout clock, and performs the selected function. To enter the Display Settings mode:

- 1. Select "Display Settings" from the main setup menu. The display settings menu will appear on the screen. The **Back** soft key returns to the previous menu. The **Exit** soft key exits all setup menus and returns to the "Now Playing" screen.

2. Press the **Vol +** and **Vol -** keys to scroll through the menu options and highlight the desired function: "Contrast" or "Backlight Timeout."

3. When "Contrast" is highlighted, adjust the respective level using the **<** and **>** keys. The current level is indicated by the sliding bar graph.



4. When "Backlight Timeout" is highlighted, adjust the time that the backlight stays on after any keypad activity in 10-second increments. The **>** key increases the time. The **<** key decreases the time. A timeout setting of "0" means the backlight will always be on. "Always On" will appear in the screen. The maximum backlight timeout setting is 240 seconds (4 minutes).

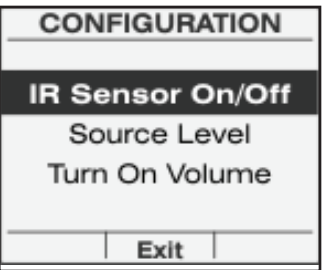


5. The **Niles** key selects the last played source when the backlight is off and the zone is off. If the backlight never turns off, the feature is disabled.

KEYPAD CONFIGURATION

The Solo-6MD features a configuration menu that accesses advanced settings usually performed at the time of installation. To enter the keypad configuration mode:

- 1. Press-and-hold the **Niles** logo soft key (the middle key below the display) for approximately 10 seconds or until the Configuration screen appears.



Release the button when the configuration screen appears.

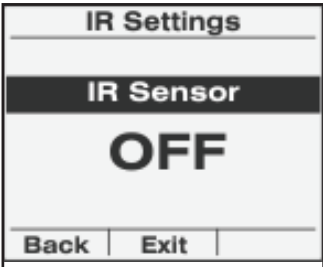
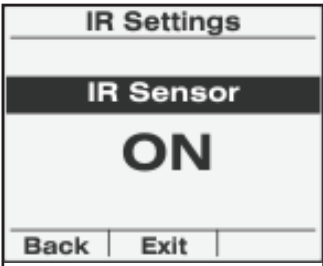
SETTING UP THE ZONE KEYPADS

- 2. Press the **Vol +** and **Vol –** keys to scroll through and highlight one of the three functions: IR Sensor On/Off, Source Level, or Turn On Volume.
- 3. Press the **Play/Pause/Select** key to select the highlighted option.

IR SENSOR ON/OFF

The keypad’s built-in IR sensor can be deactivated to prevent IR control issues, such as when the keypad is exposed to direct sunlight. To turn the IR Sensor on and off:

- 1. Select IR Sensor On/Off from the Configuration menu. The IR settings menu will appear. The **Back** soft key returns to the previous menu. The **Exit** soft key exits all menus and returns to the "Now Playing" screen.
- 2. Press the **<** and **>** keys to toggle the IR sensor on and off.



SOURCE LEVEL ADJUSTMENT

Often, source devices will have different volume output levels. The Solo-6 MD includes an adjustment to match the volume levels of the connected source devices so when a source is changed the volume level stays constant. This volume level adjustment is global and must be performed in only one zone. To set the zone Source Device Levels:

- 1. Select Source Level from the Configuration menu. The Source Level menu will appear. The **Back** soft key returns to the previous menu. The **Exit** soft key exits all menus and returns to the Now Playing screen.

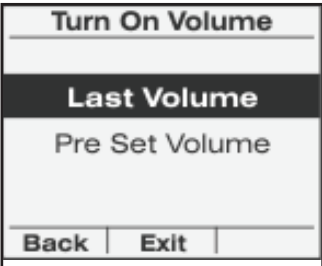
Source Level	
Radio	0
iPod	2
DVD	2
SAT TV	0
CD Ch	2
Back	Exit

- 2. Press the **Vol +** and **Vol –** keys to scroll through and highlight the connected source devices.3. Press the **Play/Pause/Select** key to select the highlighted source device in the zone. It will start playing at the reference volume level.
- 4. Press the **<** or **>** keys to raise or lower the volume level of the selected source device. The adjustment range is 0 to +7 for each source device.

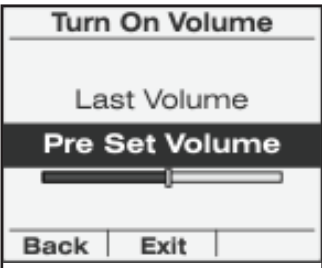
ZONE TURN-ON VOLUME

By default, each zone will turn on at the last played volume level. Initially, this level is set to 60. If preferred, each zone can be configured to always turn on at the same volume level, regardless of the last played volume. The most commonly used source device should be playing in the zone. To set the Zone Turn-on Volume Level:

- 1. Select Turn On Volume from the Configuration menu. The Turn On Volume menu will appear. The **Back** soft key returns to the previous menu. The **Exit** soft key exits all menus and returns to the Now Playing screen.
- 2. Press the **Vol +** and **Vol –** keys to scroll through and highlight one of the options: Last Volume or Pre Set Volume.



- 3. When Pre Set Volume is highlighted, a bar graph appears showing the current volume level. Press the **<** or **>** keys to raise or lower the turn-on volume level in the zone.



PROGRAMMING THE R-8L HAND-HELD LEARNING REMOTE CONTROL

BATTERY REQUIREMENTS, USE, AND SAFETY

- Requires two “AA” batteries (included)
- Use only fresh batteries
- Do not mix old and new batteries, different types of batteries (standard, alkaline, or rechargeable) or rechargeable batteries of different capacities
- When the R8-L remote is not used for extended periods of time, remove the batteries to avoid destructive chemical leakage
- Dispose of old batteries promptly and properly—do not burn or bury them
- When the battery voltage is low, a source key LED will blink five times after a button press

INSTALLING THE BATTERIES

1. Open the battery compartment cover (located on the back of the remote).
2. Place the “AA” batteries in the compartment and match the + and – polarity symbols inside.
3. Replace the battery compartment cover.

CONFIGURING THE TV AND AUX DEVICES

Before proceeding, find the codes for the devices to be controlled from the provided “Manufacturer’s Codes” list and write them down or highlight them.

Input the five-digit codes to configure devices for the TV and Aux buttons following the procedure below. Codes configured in this manner are stored in a different location and do not affect the capacity for learning commands manually into the remote.

1. Turn on the device, for example, a DVD player and, if needed, load media (for example, a DVD disc).
2. Press the **TV** or the **Aux** button on the R-8L remote.
3. Press-and-hold the **Setup** button until the selected TV or **Aux** button blinks twice, then release.
4. Enter the first available five-digit code for the device you wish to program. The **TV** or **Aux** button’s LED blinks once as each digit is entered. If the code is valid, the LED blinks twice. If the button does not blink twice, repeats steps 2-4 and try entering the code again.

5. Aim the R-8L remote at the device and press the **Power Off** button. The device should turn off. If it does not, repeat steps 3-5, trying the other codes for the device until one works. If none of the codes work, see “*Searching For Your Code*” in the next section.

Repeat steps 1-5 for the other device to be configured for the **TV** and **Aux** buttons.

SEARCHING FOR A CODE

If the device does not respond to the remote after entering all of the codes listed for the brand, or if the brand is not listed, use the following procedure to search for the code:

1. Turn on the device you wish to control.
2. Press the **TV** or the **Aux** button on the R-8L remote.
3. Press-and-hold the **Setup** button until the selected **TV** or **Aux** button blinks twice, then release.
4. Enter **9 9 1**, then the device Group Number (the table below). The LED blinks twice.

Table: Device Group Number

0	Cable (cable converters, video accessories, satellite receivers)
1	TV (TVs)
2	VCR (VCRs, DVD players)
3	Audio (audio amplifiers, audio amp/tuners, CD players)

5. Aim the R-8L remote at the device and press the **Power Off** button. The remote sends IR codes from its library to the device, starting with the most popular code first. If the device responds, go to step 7.
6. If the device does not respond, press the **CH +** button. The R-8L remote will test the next code for the device type. Continue pressing the **CH +** button until the device turns off. Press the **CH –** button to go back to the previous code.
7. Now that the code has been found, press the **Setup** button to save the code. The **TV** or **Aux** button will blink twice to indicate that the code has been saved.
8. Repeat steps 1-5 to search for other device codes.

PROGRAMMING THE R-8L HAND-HELD LEARNING REMOTE CONTROL

CHECKING THE CODES

If the R-8L remote was set up using the procedure from “*Searching For Your Code*,” it may become necessary to find out which five-digit code is operating the device. For example, to find out which five-digit code is assigned to the TV:

1. Press the **TV** button once.
2. Press-and-hold the **Setup** button until the **TV** button LED blinks twice, then release.
3. Enter **9 9 0**. The TV button LED blinks twice.
4. To view the first code digit, press **1**. Count the number of LED blinks. For example: three blinks = 3. If the code digit is “0” the LED does not blink. Make note of this number.
5. Continue through the five digits by pressing **2** for the second digit, **3** for the third, **4** for the fourth, and finally **5** for the fifth. Count the LED blinks for each digit.
6. To check for the Aux button device code, repeat steps 1-5, substituting the **Aux** button for the **TV** button.

PROGRAMMING SOURCES 2, 3, 4, 5, AND 6

The IR commands for source devices 2, 3, 4, 5, and 6 are learned into the R-8L remote directly from the source device factory remotes.

TECH TIP

To be certain that functions operate properly, all IR commands for source devices 2, 3, 4, 5, and 6 must be learned from the original factory remote. The total number of commands that can be stored in the R-8L remote varies from 42 to 75, depending on the size of the commands being learned.



PRECAUTIONS

- The source device factory remotes must be in working order for the R-8L remote to learn IR codes properly.
- Learned buttons are device-specific; each stores a unique function for each device. Be certain that the correct source device is selected before learning codes.
- Do not use any of the **Source** buttons or the **Setup** button to learn.

- Certain IR command codes cannot be learned, including multi-frequency types, some high-frequency types, and other unusual formats.
- During programming, avoid high levels of ambient light, such as natural sunlight or fluorescent lighting.

PROGRAMMING A LEARNING BUTTON

Have the source device factory remote handy before beginning the programming process.

To program a learning button:

1. Place the R-8L remote control and the source device factory remote head-to-head (about 2” apart).
2. Locate the button on the source device factory remote that the R-8L is going to learn.
3. Press the Source button on the R-8L that corresponds to the source device
4. Press-and-hold the **Setup** button until the Source button LED blinks twice, then release.
5. Enter **9 7 5**. The Source button LED blinks twice. If the LED displays one long flash instead, the R-8L batteries are low, or the R-8L’s memory is full. In either case, the remote cannot learn a new button.
6. Press the R-8L button that is to learn the command. The Source button LED will blink rapidly for three seconds, indicating the remote is ready to learn.
7. On the source device factory remote, press-and-hold the button to be learned. Continue holding the button until the R-8L’s Source key LED blinks twice. If the Source button LED displays one long blink, a learning error has occurred. Try repeating the steps again until a successful capture is obtained. If the function cannot be captured, press-and-hold the **Setup** button to exit programming. Review the “Learning Precautions” section above. Also review the “Troubleshooting” section at the end of the system guide. After review, start the programming procedure again.
8. Repeat steps 6-7 for each button to be learned. Once all buttons have been learned, press-and-hold the **Setup** button until the Source key LED blinks twice to save all data learned.

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PROGRAMMING THE R-8L HAND-HELD LEARNING REMOTE CONTROL

ERASING A SINGLE LEARNED BUTTON

A button can return to its original programming for a selected device. A button can also be taught a new function using the “Programming A Learned Key” procedure in the prior section. Please note that if more than ten seconds pass between button presses, the remote exits the programming mode.

To Erase a Single Learned Button:

1. Press the **Source** button for the device whose code is to be erased.
2. Press-and-hold the **Setup** button until the selected Source button’s LED blinks twice, then release.
3. Enter **9 7 6**. The Source button LED blinks twice.
4. Press the button twice that contains the learned function to be erased. The Source button LED blinks twice and the R-8L remote exits the programming mode.

ERASING ALL LEARNED BUTTONS FOR A SPECIFIC DEVICE

Please note that if more than ten seconds passes between button presses, the remote exits the programming mode.

To Erase All Learned Buttons For A Specific Device:

1. Press-and-hold the **Setup** button until the selected Source button’s LED blinks twice, then release.
2. Press **9 7 6**. The Source button LED blinks twice.
3. Press a **Source** button twice to clear all the learned buttons for that device. The Source button LED blinks twice and the R-8L exits from the programming mode.

RESTORING ALL BUTTON FUNCTIONS TO FACTORY SETTINGS

Please note that if more than ten seconds passes between button presses, the remote exits the programming mode.

To Restore All Button Functions To Factory Settings:

1. Press-and-hold the **Setup** button until the selected Source button’s LED blinks twice, then release.
2. Press **9 8 0**. The Source button LED blinks four times.
3. Press-and-hold the **Setup** button until the red LED blinks twice, then release.

PROGRAMMING A SEQUENCE

TECH TIP

Any button on the Niles R-8L Hand-Held Learning Remote Control (except the Setup button) can be programmed with a sequence. A sequence is a set of sequential commands initiated by one press of a button. A typical home theater sequence might turn the TV on, turn the home theater receiver on, select the proper input on the receiver, select the proper input on the TV, turn the DVD player on, and put the DVD player in to the play mode.



Please note that programming a new sequence over an existing one erases the original sequence.

To Program a Sequence:

1. Press a Source button.
2. Press-and-hold the **Setup** button until the selected Source button’s LED blinks twice, then release
3. Press **9 7 8**. The Source button LED blinks four times.
4. Press the button that the sequence is to be assigned to
5. Enter the series of commands, in the desired order, that the sequence is to execute (up to 15 commands).
6. Press-and-hold the **Setup** button until the red LED blinks twice, then release.

TECH TIP

When the button that has been programmed with the sequence is pressed, the remote sends the series of commands, but only if the source device selected in Step 1 is selected. For example, A sequence key can be programmed to turn on both the TV and the cable box, but only if TV is selected as the source. If DVD is selected, the button does not execute the sequence for the TV.



7. To clear the sequence, repeat steps 1-6 above, but do not enter a series of commands at step 5.

FROM THE SOLO-6 IR KEYPAD

OPERATING A LISTENING ZONE

1. Press a **Master** key to turn on the selected source in the zone. The selected **Master** key will illuminate.
2. The source will start playing in the zone at either the last-played volume level, or the configured preset volume level (see the “Keypad Configuration” section).
3. Any programmed source selection sequence (see the “Building IR Sequences for Source Devices” section) will be executed, unless the selected source is already playing in another zone. Source in use: Fast blink 5 seconds
4. When the zone turns on, the global 12V trigger on the rear panel of the ZR-6 MultiZone Receiver becomes active, the 12V output on the keypad becomes active, and, if zone 4, 5, or 6 is selected, the respective 12V output on the ZR-6 MultiZone Receiver becomes active.
5. The **Vol +** and **Vol –** keys raise and lower the volume in the zone. A continuous press raises or lowers the volume until the key is released.
6. The **Mute** key silences the zone speakers without affecting the source device. The active **Master** key slow blinks when muted.
7. When the zone is muted, press the **Mute** key, the **Vol +** or **Vol –** key, or any **Source** key to restore the volume to the previous level.
8. Press the **Off** key to turn off the zone as well as the selected source if it is not playing in another zone. The source key illumination will turn off. The 12V outputs for zones 4, 5, and 6 will turn off after a 5-second delay. And if no other zones are on, the global 12V output will also turn off after a 5-second delay.

RADIO FUNCTIONS:

1. When the radio is playing, pressing the **Radio** key will toggle through the station presets stored in the ZR-6 MultiZone Receiver.
2. Press the **<** and **>** key to seek up or down to the next clear station. Press-and hold the **<** and **>** keys to pause at the next station for three seconds and then move to the next clear station. Release the button when a desired station is reached.

3. If the zone is muted, press the **Play/Pause** key to unmute the zone. If the zone is not in the mute mode, press the **Play/Pause** key to toggle between the AM and FM bands.
4. When a Numeric-6P Accessory Keypad is installed with the Solo-6 IR, press the **Fav** key and then the numeric keys (two digit inputs such as **01**, **02**, **19**, etc.) to directly access a stored preset station.
5. When a Numeric-6P Accessory Keypad is installed with the Solo-6 IR, pressing the numeric keys **0 – 9** provides direct access tuning to radio stations. For example, pressing the number keys **1**, **0**, **2**, and **7** will tune in radio station 102.7.

iPod FUNCTIONS:

1. When selected, the iPod begins playing the last-played song with the repeat mode active. The **Master** key will blink fast if the iPod is not connected.
2. When the iPod is playing, press the **iPod** key to toggle through the playlists.
3. Press the **<** and **>** keys to select the previous or next song in the play queue.
4. Press the **Play/Pause** key to toggle between play and pause.

OTHER SOURCE FUNCTIONS:

1. Pressing any function key on the Solo-6 IR or Numeric-6P (if installed) will issue the IR command programmed for the respective key.

PARTY (WHOLE HOUSE) MODE:

1. Press-and-hold a **Master** key on any installed keypad to turn on the selected source in all enabled zones (see “Party Mode” in the Configuration section). Each zone will react as if the source key was pressed in that particular zone.
2. Press-and-hold the **Off** key to turn off the entire system (all zones).

TECH TIP

When the AM/FM tuner is selected to play in the Party mode by pressing-and-holding the **Radio** key on a keypad, the last-selected station in that zone will play in all zones enabled for the Party mode. To change the station while in the Party mode, tune in a new station in a zone, and then press-and-hold the **Radio** key. The new station will play in all zones enabled for the Party mode.



(CONTINUED ON NEXT PAGE)

FROM THE SOLO-6 IR KEYPAD

MISCELLANEOUS

- 1. During a page, the active **Master** key will blink fast if the zone is enabled to receive a page.
- 2. Should the ZR-6 MultiZone Receiver experience a fault (overheating, speaker short, etc.) all Source keys will blink. The zone may or may not continue to play music, depending on the type of fault detected. The front display on the ZR-6 MultiZone Receiver will provide more detailed information (see the “*Troubleshooting*” section).

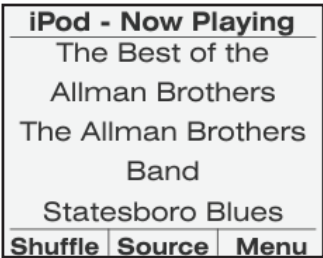
FROM THE SOLO-6 MD KEYPAD

OPERATING A LISTENING ZONE

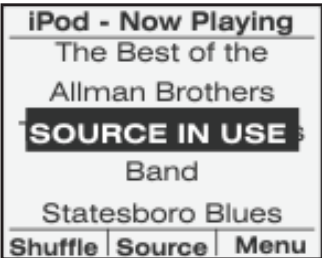
The keypad backlight will turn off after the elapsed time selected in the Solo-6 MD configuration menu. The keys are always active, even if the backlight is off. Pressing any key will activate the backlight, restart the backlight timeout clock, and perform the selected function.

- 1. Pressing the **Radio** key immediately selects the radio for play
- 2. Pressing the **iPod** key immediately selects the iPod for play.
- 3. When the backlight is off and the zone is off (no source playing), pressing the **Niles** logo soft key will turn on the zone to the last played source.
- 4. When a source is selected in the zone:

- The “Now Playing” screen for the respective source will be displayed.
- The source will start playing in the zone at either the last played volume or the configured preset volume (see *Keypad Configuration*).
- Any programmed source selection command sequence (see Building IR Sequences for Source Devices) will be executed unless the selected source is already playing in another zone.



- If the selected source is already playing in another zone, the “Source In Use” screen will be displayed for 5 seconds to notify the user that any operation will also affect the other zone.
- Pressing the **Play/Pause/Select** key while the “Source In Use” screen is displayed will execute the source selection command sequence.
- When the zone turns on, the global 12V trigger on the rear panel of the ZR-6 MultiZone Receiver becomes active, the 12V LS-IOP output on the keypad becomes active, and, if zone 4, 5, or 6 is selected, the respective 12V output on the ZR-6 MultiZone Receiver becomes active.



- 5. When a source’s “Now Playing” screen is displayed, the **Vol +** and **Vol –** keys will raise and lower the sound volume level in the zone. A continuous press raises or lowers the volume until the key is released.
- A volume bar graph will be displayed indicating the current volume level. The bar graph is displayed while the level is being adjusted and remains for 3 seconds after the key is released.



FROM THE SOLO-6 MD KEYPAD

6. The **Mute** key silences the zone speakers without affecting the source device. The Mute screen will be displayed when mute is active.



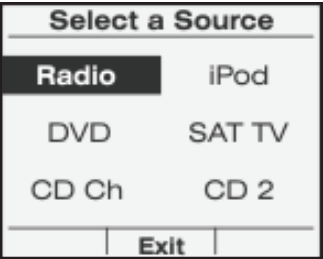
7. When the zone is muted, press the **Mute** key, the **Vol +** or **Vol -** key, the **Radio** or **iPod** key to restore the volume to the previous level.

8. Press the **Off** key to turn off the zone as well as the selected source if it is not playing in another zone. The Niles logo screen will be displayed. The 12V output on the keypad turns off. The 12V outputs for zones 4, 5, and 6 will turn off after a 5-second delay. And if no other zones are on, the global 12V output will also turn off after a 5-second delay.



SELECTING A SOURCE

1. With the keypad backlight on, press the **Niles** logo soft key (labeled "Source" in the display above. "Select a Source" will be displayed. To exit the source selection menu, press the **Exit** soft key to return to the previous screen.



2. Press the **Vol +**, **Vol -**, **<**, and **>** keys to scroll through and highlight the connected source devices.

3. Press the **Play/Pause/Select** key to select the highlighted option. The selected source device will begin playing in the zone. All zone activation functions, 12V triggers, IR sequences, etc., will be executed. The appropriate "Now Playing" screen will be displayed (see Device Source Screens Library, Appendix A).

RADIO FUNCTIONS

1. When the radio is active in the zone, the "Radio-Now Playing" screen is displayed. The currently playing station frequency number and preset station number, if any, will also be displayed.



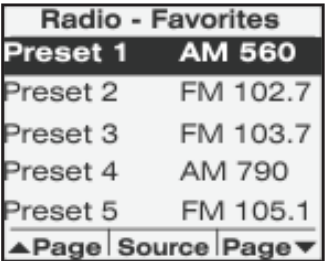
2. When the radio is active in the zone, press the **Radio** key to toggle through the radio station presets stored in the ZR-6 MultiZone Receiver.

3. Press the **<** and **>** keys to seek up or down to the next clear station. Press-and-hold the **<** and **>** keys to pause at the next station for three seconds and then move to the next clear station. Release the key when a desired station is reached.

4. Press the **AM/FM** soft key to toggle between the AM and FM bands.

5. Press the **FAV** soft key to display the list of preset stations stored in the ZR-6 MultiZone Receiver

- Press the **Vol +** and **Vol -** keys to scroll through and highlight the preset stations. Press the **Page ▲** and **Page ▼** soft keys to move up a page or down a page (five preset stations per page).



- Press the **Play/Pause/Select** key to select the highlighted preset station.

6. If the zone is muted, press the **Play/Pause/Select** key to unmute the zone.

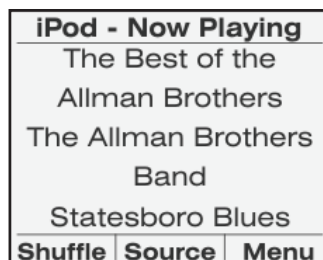
7. If the zone is not muted, press the **Play/Pause/Select** key to toggle between the AM and FM bands.

(CONTINUED ON NEXT PAGE)

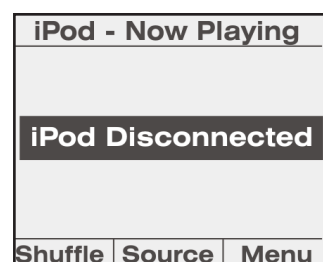
FROM THE SOLO-6 MD KEYPAD

iPod FUNCTIONS

- When the iPod is active in the zone, the “iPod-Now Playing” screen is displayed. The currently playing song, artist, and album information will also be displayed.



- When selected, the iPod begins playing the last-played song in repeat mode.
- If the iPod is disconnected from the system (removed from its dock), the “iPod Disconnected” screen will be displayed.



- When the iPod is playing, press the **iPod** key to toggle through the playlists.
- Press the **<** and **>** keys to select the previous or next song in the play queue.
- Press the **Play/Pause/Select** key to toggle between play and pause.
- Press the **Shuffle** soft key to toggle the Shuffle (random) mode on and off.

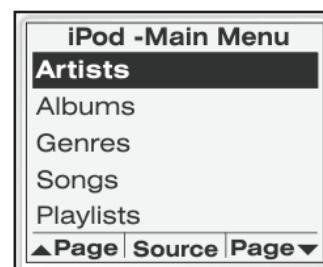
iPod MENU OPERATION

Only one user can access the iPod menu at a time. If a user tries to access the iPod menu while it is being used by another, the “iPod Menu In Use” screen will be briefly displayed, and then the “Now Playing” screen will return after a few seconds.

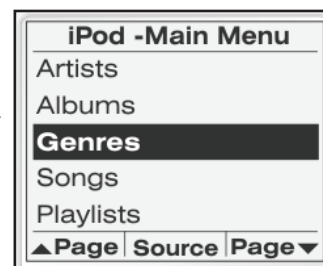


- Press the **Menu** soft key to access the iPod main audio navigation menu. These menus are generated by the iPod and have the same functionality as the iPod’s internal menus. At any time, press the **<** key to return to the previous menu.

- Press the **Vol +** and **Vol -** keys to scroll through and highlight the selections. You can also press-and-hold the **Vol +** and **Vol -** keys to initiate a variable scrolling speed—the longer the press-and-hold, the faster the scroll speed.



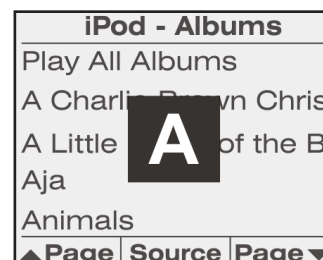
- If necessary, press **Page ▲** and **Page ▼** to move up a page or down a page (five items per page).
- Press the **Play/Pause/Select** key to select the highlighted item.



iPod SEARCH FUNCTIONS

- While in a searchable menu, press the iPod key to initiate the iPod search function.

- The letter “A” will be displayed in large text.
- Press the **Vol +** and **Vol -** keys to scroll through the alphabet and the “#” symbol (the # symbol selects all menu items that don’t begin with a letter, e.g. “99 Tears”).



- When the desired letter or the # symbol is displayed, press the **Play/Pause/Select** key. The screen will jump to the menu items beginning with that letter (or when the # symbol is displayed, the items that don’t begin with a letter). This deactivates the search mode and reactivates the normal scrolling operation.

NOTE: THE IPOD SEARCH MENUS DISPLAYED ON THE SOLO6 MD ARE GENERATED BY THE CONNECTED IPOD. TO CHANGE THEM, THEY MUST BE CHANGED IN THE IPOD ITSELF. SEE YOUR IPOD MANUAL FOR INSTRUCTIONS.

FROM THE SOLO-6 MD KEYPAD

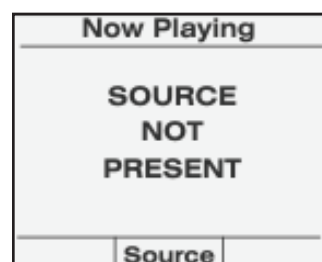
OTHER SOURCE FUNCTIONS

1. When a source is playing in the zone, the appropriate "Now Playing" screen will be displayed.



2. Pressing any of the function keys on the Solo-6 MD keypad will issue the IR command programmed for the respective key.

3. If the selected source input has not been configured for a source (see Naming Sources), the "Source Not Present" screen will be displayed.



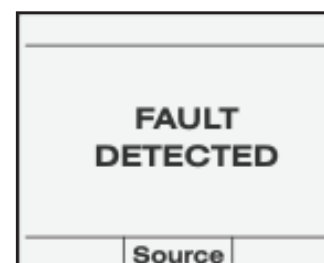
PARTY (WHOLE-HOUSE) MODE

1. Press-and-hold either the **Radio** key or the **iPod** key on any installed keypad to turn on the radio or iPod in all enabled zones (see "Party Mode" in the **Configuration** section). Each zone will react as if the source key was pressed in that particular zone.
2. When selecting a source from the source menu, press-and-hold the **Play/Pause/Select** key to activate the Party mode for the selected source.
3. Press-and-hold the **Off** key to turn off the entire system (all zones).

MISCELLANEOUS

1. During a page, the active logo soft key will blink if the zone is enabled to receive a page.

2. Should the ZR-6 MultiZone Receiver experience a fault (overheating, speaker short, etc.) "Fault Detected" will be displayed. The zone may or may not continue to play music, depending on the type of fault detected. The front display on the ZR-6 MultiZone Receiver will provide more detailed information (see the **Troubleshooting** section).



FROM THE R-8L LEARNING REMOTE CONTROL

The R-8 L Remote Control will operate any zone of the system by communicating to the ZR-6 MultiZone Receiver through the IR Sensor located in each keypad. The keypad to which the R-8L is communicating determines the zone being controlled. For example, if the R-8L is transmitting to the IR Sensor located in the keypad connected to Zone 1, the R-8L will control Zone 1.

PLAY THE AM/FM TUNER

1. Press the **AM/FM** button on the R-8L Remote Control and the zone will turn on to the preset turn-on volume as well as the last selected station. The global 12V output on the rear panel of the ZR-6 MultiZone Receiver, and the 12V output on the back of the Zone keypad(s) will become active. If the R-8L is controlling Zones 4, 5, or 6, the respective 12V output on the rear panel of the ZR-6 MultiZone Receiver will also become active.
2. Pressing the **AM/FM** button or the **Channel +** and **Channel -** buttons will toggle through the preset stations in the ZR-6's memory. If no presets are stored then the tuner will scan to the next station.
3. The **Vol +** and **Vol -** buttons will raise and lower the level of sound in the zone.
4. Pressing the **0 - 9** buttons will directly access radio stations by frequency.
5. Pressing the **FAV** button and then the numeric buttons will directly access a preset station. For stations 1-4 you must press "0" first.
6. Pressing the **Off** button will turn off the zone. The 12V output on the keypad becomes inactive. If the keypad is controlling Zones 4, 5 or 6, the respective 12V output on the back panel becomes inactive after 5 seconds. The global 12V output on the rear panel becomes inactive after 5 seconds if all other zones are off.

PLAY THE iPod

NOTE: IF AN iPod IS NOT CONNECTED, SOURCE 2 WILL FUNCTION AS DESCRIBED IN "PLAY SOURCES 2-6"

1. Press the **SRC 2** button on the R-8L Remote Control and the zone will turn on to the preset turn-on volume as well as the last played song. By default the iPod will turn on with Repeat active. The global 12V output on the rear panel of the ZR-6 MultiZone Receiver, and the 12V output on

the back of the Zone keypad(s) will become active. If the keypad is controlling Zones 4, 5 or 6, the respective 12V output on the rear panel of the ZR-6 MultiZone Receiver will also become active.

2. Pressing the **◀◀** and **▶▶** buttons will toggle through the songs on the iPod.
3. Pressing the **◀◀** and **▶▶** buttons will rewind and fast-forward the iPod.
4. Pressing the **⏸** button will pause the iPod.
5. Pressing the **▶** button will play the iPod.
6. **Vol +** and **Vol -** will raise and lower the level of sound in the zone.
7. Pressing **FAV** button and then 0 -9 on the numeric buttons will directly access the first ten available playlists, if applicable.
8. Pressing the **Off** button will turn off the zone. The 12V output on the keypad becomes inactive. If the keypad is controlling Zones 4, 5 or 6, the respective 12V output on the back panel becomes inactive after 5 seconds. The global 12V output on the rear panel becomes inactive after 5 seconds if all other zones are off.

PLAY SOURCES 2-6

1. Pressing any of these Source buttons will turn on the zone and allow you to listen to the source connected to that input at the preset turn-on volume. The global 12V output on the rear panel of the ZR-6 MultiZone Receiver, and the 12V output on the back of the keypad will become active. If the keypad is controlling Zones 4, 5, or 6, the respective 12V output on the rear panel of the ZR-6 will also become active.
2. **Vol +** and **Vol -** buttons will raise and lower the level of sound in the zone.
3. The type of device selected determines other control functions of the remote.
4. Pressing the **Off** button will turn off the zone. The 12V output on the keypad becomes inactive. If the keypad is controlling Zones 4, 5, or 6, the respective 12V output on the back panel becomes inactive after 5 seconds. The global 12V output on the rear panel becomes inactive after 5 seconds if all other zones are off.

TROUBLESHOOTING

PROBLEM:

1. Front panel DISPLAY blinks: THERMAL WARNING.

If the ZR-6 MultiZone Receiver has an inappropriate speaker impedance load or inadequate ventilation, the system will continue to work, but with a warning that a fault needs to be corrected. Other fault indicators include: blinking front panel zone LED(s) corresponding to the faulted zone(s) and blinking source and mute keys on the keypads.

SOLUTION:

- Check that the speaker impedance in all zones is not below 4 ohms per channel. If four speakers are to be connected in a zone, they must be 8 ohm speakers connected in parallel.
- Check to make sure there is adequate space above the ventilation holes on the top of the ZR-6 MultiZone Receiver. A Niles FM-1 (FG01215) or FM-1R (FG01214) System Cooling Module may be necessary in installations where ventilation is limited.

PROBLEM:

2. No sound (All Zones)**Front panel DISPLAY blinks: THERMAL PROTECTION.**

If the ZR-6 MultiZone Receiver has an inappropriate speaker impedance load or inadequate ventilation, eventually the entire system will turn off. Other fault indicators include: a blinking front panel zone LED(s) corresponding to the faulted zone(s) and blinking source and mute keys on the keypads.

SOLUTION:

- Check that the speaker impedance in all zones is not below 4 ohms per channel. If four speakers are to be connected in a zone, they must be 8 ohm speakers connected in parallel.
- Check to make sure there is plenty of space above the ventilation holes on the top of the ZR-6 MultiZone Receiver. A Niles FM-1 (FG01215) or FM-1R (FG01214) System Cooling Module may be necessary in installations where ventilation is limited.

PROBLEM:

3a) No sound from both channels (One or More Zones)

Front panel DISPLAY blinks: ZONE (X) LSPKR SHORT or ZONE (X) RSPKR SHORT.

3b) Sound from only one channel (One or More Zones)

Front panel DISPLAY blinks: ZONE (X) LSPKR OK or ZONE (X) RSPKR SHORT.

If a speaker wire has a short circuit, the shorted channel(s) of the ZR-6 MultiZone Receiver will shut down. Other fault indicators include: blinking front panel zone LED(s) corresponding to the faulted zone(s) and blinking source and mute keys on the keypads.

SOLUTION:

- Turn the entire system off using the main power switch on the front of the ZR-6 MultiZone Receiver.
- Check for shorts and repair/ replace the speaker wire.
- Turn the system on using the main power switch.

PROBLEM:

4. No Sound (One or More Zones).**Front panel DISPLAY blinks: AMPLIFIER FAILURE.**

The output chip has acted to protect itself from potential damage. Other fault indicators include: blinking front panel zone LED(s) and blinking source and mute keys on the keypads.

SOLUTION:

- Call Niles Tech Support.

PROBLEM:

5. No sound (All Zones).**Front panel DISPLAY blinks: POWER FAILURE.**

The output chip has acted to protect itself from potential damage. Other fault indicators include: a blinking front panel zone LEDs and blinking source and mute keys on the keypads.

SOLUTION:

- Call Niles Tech Support.

(CONTINUED ON NEXT PAGE)

TROUBLESHOOTING

PROBLEM:

6. Poor or no radio reception.

SOLUTION:

Check the receiver's back panel to see if the FM dipole and AM loop antennas are connected. It may be necessary to reposition them to optimize reception.

PROBLEM:

7. Keypad does not function.

SOLUTION:

- Make sure that the CAT-5 cable is terminated using the T568A wiring convention.
- Check that the RJ-45 connector is firmly seated in the back of the keypad.

PROBLEM:

8. No source control.

SOLUTION:

- The infrared MicroFlasher is not connected properly to the back of the receiver.
- The infrared MicroFlasher is not affixed properly to the controlled component.
- The batteries in the hand-held remote control are dead.
- The IR Sensor is turned off (See Page 28, 29.)

PROBLEM:

9. A Zone does not turn on when in the Party Mode.

SOLUTION:

- Check the system configuration settings for **PARTY OR WHOLE HOUSE MODE.**

PROBLEM:

10. A Zone does not turn on when in the Paging Mode.

SOLUTION:

- Check the system configuration settings for **PAGING**

HAND HELD REMOTE TROUBLESHOOTING

PROBLEM:

1. LED does not blink when you press a key.

SOLUTION:

- Try pressing different keys. Replace the batteries with 2 new AA batteries.

PROBLEM:

2. LED blinks when you press a key, but device does not respond.

SOLUTION:

- Make sure the remote is aimed at your device and is not more than 40 feet away.

PROBLEM:

3. LED blinks one long blink while in SETUP mode.

SOLUTION:

- An entry error has occurred (for example, wrong key). Try entering the sequence again.

PROBLEM:

4. Remote does not control devices or commands are not working properly.

SOLUTION:

- Try all listed codes for the device. Make sure the device operates with an infrared remote control.

PROBLEM:

5. CH+, CH-, and LAST do not work for your RCA TV.

SOLUTION:

- Due to RCA design from 1983 to 1987, only the original remote control will operate these functions.

PROBLEM:

6. Channels do not change properly when directly entering digits to change channels.

SOLUTION:

- If the original remote control required you to press Enter to change channels, press Enter on this remote after entering the channel number.

ZR-6 ERROR CODES

<u>LCD Panel Message</u>	<u>Correction</u>
AMP NOT HI Z	Internal Amplifier Error; Reboot System
EEPROM FAULT	Internal Processor Error; Reboot System
MULTIPLE MASTERS	More than One Chassis Designated as Master
MULTIPLE SLAVES	More than One Chassis with the Same Slave Name (1 or 2)
OVERLOAD	Speaker Load Less than 4ohm
PROTECTION	Speaker Load Less than 4ohm
THERMAL WARNING	Inadequate Ventilation
ZONE # LSPKR OK	Speaker Wired Correctly in a Zone with an Incorrect Speaker
ZONE # LSPKR PVDD	Internal Amplifier Error; Reboot System
ZONE # LSPKR SHRT	Speaker Shorted; Check Wiring
ZONE # RSPKR OK	Speaker Wired Correctly in a Zone with an Incorrect Speaker
ZONE # LSPKR PVDD	Internal Amplifier Error; Reboot System
ZONE # LSPKR SHRT	Speaker Shorted; Check Wiring



TUNER SECTION

FM TUNER

Frequency Range:
87.5 – 108 MHz

AM TUNER

Frequency Range:
530-1710 kHz

IF Rejection: ≥ 40dB
Image Rejection: ≥ 30dB

Selectivity:
≥ 20dB (+/- 20kHz)
Usable Sensitivity:
≤ 63dBu (S/N = 20dB)
S/N Ratio: ≥ 42dB

AMPLIFIER SECTION

Power Output:
25 watts per channel RMS at 8 ohm, from
20Hz to 20kHz with no more than 0.2%
THD any zone driven
Frequency Response:
20Hz to 20kHz +0db/-0.5dB
Signal to Noise Ratio:
100dB (A-weighted)

TONE ADJUSTMENTS

Treble (@10kHz):
+/-12dB
Bass (@50Hz):
+/-12dB
Variable Loudness:
Automatic - selectable on/off

AUDIO INPUTS

Connectors:
Five pairs of stereo line-level analog inputs
with gold-plated female RCA connectors;
One paging input
Input Impedance:
~10K ohm

CONTROL INTERFACES

- (6) Keypad Connector Ports
RJ-45 Jacks
- (4) 12V Control Outputs
3.5 mm female tip-positive (150mA,
Global, Zones 4, 5, 6)
- (5) Video Sync Inputs
Input impedance: 10k
- (5) Voltage Sync Inputs
3-30V AC/DC (10mA)
- (3) Pre-amp Outputs (stereo pairs)
Output impedance: 100 ohms
- (1) Home Theater Sync Input
3-30V AC/DC (10mA)
- (1) iPod Connector
- (1) IR Control Input
3.5 mm female tip-positive
- (5) Flasher Outputs (2-6)
3.5 mm female tip-positive (30mA peak)
- (1) Flasher Output HP
3.5 mm female tip-positive (1A peak)
- (2) RS-232
 - Rear panel - 3.5 mm female tip-
positive
 - Front panel - DB9 nine-pin serial
connector, female
- (2) Expansion Ports
In and Out, RJ-45

GENERAL

Power Supply:
110V, 60 Hz
KPV:
30
Power Consumption:
200 Watts
Dimensions:
17" wide x 3.5" high x 15" deep,
43.18 cm wide x 8.89 cm high x 38.1 cm
deep
Weight:
25 lbs, 11.36 kg

REMOTE CONTROL

Transmitter:
Infrared
Signal Range:
15-30 feet / 5-10 meters
Power Supply:
(2) "AA" Batteries (1.5V x 2)

CONTROL COMMAND STRINGS

The ZR-6 MultiZone Receiver supports full two-way RS-232 control communications. This greatly expands potential applications, allowing complete integration with third-party control systems.

HARDWARE CONFIGURATION

3.5 mm female connector:

- Tip = Transmit
- Ring = Receive
- Sleeve = Ground

COMMUNICATION PARAMETERS

- 38,400 Baud
- 8 Data Bits
- 1 Stop Bit
- No parity
- No Flow Control

CONTROL COMMAND STRINGS

Information can only be requested for the active control zone.

NOTE: THE ZR-6 MULTIZONE RECEIVER DOES NOT CONTINUALLY PROVIDE SYSTEM STATUS AND RESPONDS ONLY TO REQUESTS FOR INFORMATION. IT THEREFORE MUST BE POLLED TO UPDATE THIRD-PARTY DEVICES.

1) **Making a zone the active control zone** - Select the zone to receive commands

Syntax: **znc,4,[zone #][cr]**
 znc, indicates the command type (zone command)
 4, indicates an active zone change
 [zone #] is the number of the zone to become active (1-18)
 [cr] is a carriage return

EXAMPLE :

Command: **znc,4,2[cr]** (make zone 2 the active zone)

ZR-6 Response: **nc,4,2[cr]** (confirmation that Zone 2 is now the active zone)

rznc, identifies a response to a zone command
4, identifies an active zone change

2 the number of the current active zone
[cr] carriage return

2) **Request zone status** – provides status of all active zone parameters

Syntax: **znc,5,[cr]**
 znc, indicates the command type (zone command)
 5 indicates an active zone status request
 [cr] is a carriage return

EXAMPLE :

Command: **znc,5,[cr]** (request status information for the active zone)

ZR-6 Response: **usc,2,2,3,1,14,0,0,0[cr]** (status of the active zone)

usc, identifies a response to a status request
2, identifies the response as an answer to a status request
2, is the number of the current active zone for which status is provided
3, number of the currently selected source (1-6) in the active zone
1, On/Off status of the active zone (1=On, 0=Off)
14, active zone volume level (0-99)
0, active zone mute status (1=muted, 0=unmuted)
0, active zone bass level (-7 to +7)
0 active zone treble level (-7 to +7)
[cr] is a carriage return

NOTE: IN THE EXAMPLE ZONE 2 IS PLAYING SOURCE 3; THE ZONE IS ON AT A VOLUME LEVEL OF 14%; THE ZONE IS UNMUTED; BASS AND TREBLE ARE FLAT)

3) **Zone specific command** – for controlling parameters of a single zone

Syntax: **zsc,[zone #],[com #][cr]**
 zsc, indicates the command type (zone specific command)
 [zone #], indicates the zone number to receive the command (1-18)

(CONTINUED ON NEXT PAGE)

CONTROL COMMAND STRINGS

- [com #] number of the desired command (see table of command codes)
- [cr] is a carriage return

EXAMPLE :

Command: **zsc,3,01[cr]** (selects the tuner in zone 3)

ZR-6 Response: **rzsc,3,01,OK[cr]** (tuner selected in zone 3)

rzsc, identifies a response to a zone specific command

3, identifies the zone responding to the command

01, is the number of the command executed

OK ZR-6 says, "I got it"

[cr] is a carriage return

NOTE: IN THE EXAMPLE ZONE 3 HAS SELECTED THE TUNER TO PLAY

4) **Global control command** – to simultaneously turn on or off all zones

Syntax: **znt,[com #],h[cr]**

- znt,** indicates the command type (zone transport command)
- [com #],** number of the desired command (see table of command codes)
- h** indicates a command hold
- [cr]** is a carriage return

NOTE: THE GLOBAL CONTROL (OR HOLD) FUNCTION ONLY WORKS WITH SOURCE SELECTION AND OFF TO TURN ALL PARTY MODE ENABLED ZONES ON; OR TO TURN ALL ZONES OFF.

EXAMPLE :

Command: **znt,01,h[cr]** (selects the tuner in all party enabled zones)

ZR-6 Response: **rznt,01,OK[cr]** (tuner is selected in all party enabled zones)

rznt, identifies a response to a zone transport command

01, is the number of the command executed (source 1 selected)

OK ZR-6 says, "I got it"

[cr] is a carriage return

NOTE: IN THE EXAMPLE THE TUNER HAS BEEN SELECTED TO PLAY IN ALL ZONES ENABLED FOR PARTY MODE

5) **Direct tune command** – to directly select radio stations (the tuner must be the active source in the active zone; zones 1-6 use the tuner in the Master chassis only, and zones 7-12 use the tuner in the first Slave chassis only, and zones 13 – 18 use the tuner in the second Slave chassis only)

Syntax: **src,11,[station][cr]**

- src,** indicates the command type (source command)
- 11,** indicates direct tuner command **[station]** the frequency of the desired station AM stations are shown as XXXX (four digits) FM stations are shown as XXX.X (four digits, must include decimal)
- [cr]** is a carriage return

EXAMPLE :

Command: **src,11,102.7[cr]** (tunes FM 102.7 directly)

src,11,0560[cr] (tunes AM560 directly)

ZR-6 Response: **rsrc,11,OK[cr]** (station tuned as requested)

rsrc, identifies a response to a source command

11, identifies direct tune as the command executed

OK ZR-6 says, "I got it"

[cr] is a carriage return

6) **Ready Command** – sent by the ZR-6 after the power up boot sequence to indicate proper operation, satisfactory completion of the diagnostic routines, and readiness to accept serial command. Note during the boot sequence, the ZR-6 will be sending the results of all diagnostic tests conducted during the sequence. The ready command will be sent only if the diagnostics are completed satisfactorily.

ZR-6 Response: **usc,1[cr]** (ZR-6 is now ready)

- usc,** identifies the response as an unsolicited command
- 1** indicates the ZR-6 is ready
- [cr]** is a carriage return

7) **Command Fail response** – sent by the ZR-6 when a received command fails

ZR-6 Response: **r[type],[com #],FAIL,[fcode][cr]**

CONTROL COMMAND STRINGS

- r** indicates a ZR-6 command response
- [type]** identifies the response type
 - znc** = zone command
 - znt** = zone transport command
 - src** = source command
 - srt** = source transport command
 - spc** = special command
 - syc** = system command
 - zsc** = zone specific command

[com #], the number of the failed command (see table)

- FAIL,** indication the command failed
- [fcode]** code number of the failure type:
- 1** Cannot allocate memory to process message
 - 2** Invalid Command
 - 3** Incomplete message: missing command
 - 4** Incomplete message: missing parameter
 - 5** Cannot allocate memory to process command
 - 6** Cannot change the zone: invalid zone number
 - 7** Invalid key code (command type)
 - 8** Is not allowed hold flag
 - 9** Is not allowed repeat flag
 - 10** Invalid flag
 - 11** Is not allowed flags
 - 12** Cannot find the zone: invalid index
 - 13** Cannot find the source: invalid index
 - 14** Cannot find the soft key: invalid index
 - 15** Cannot find the menu item: invalid index
 - 16** IP address is not defined
 - 17** Alternative behavior is not supported
 - 18** ZR-6 is waiting previous special command answer
 - 19** ZR-6 is waiting previous special command setting answer
 - 20** Parameter 1 is out of range
 - 21** Parameter 2 is out of range
 - 22** Parameter 3 is out of range

- 23** Parameter 4 is out of range
- 24** Invalid parameter: too many dots
- 25** Invalid parameter: must be all numbers
- 26** Menu is not available
- 27** Pound (#) or bytes do not match with the string value bytes that were taped
- 28** Menu does not support alphanumeric search

[cr] is a carriage return

8) **Erase EEPROM** – erases all configuration input and tuner presets, restoring the ZR-6 to the factory default condition.

Syntax: **syc,3,[cr]**

- syc,** indicates the command type (system command)
- 3,** indicates this is an EEPROM erase command
- [cr]** is a carriage return

EXAMPLE :

Command: **syc,3,[cr]** (erases the EEPROM)

ZR-6 Response: **rsyc,3,[cr]** (EEPROM has been erased)

- rsyc,** identifies a response to a system command
- 3,** indicates the EEPROM was erased
- [cr]** is a carriage return

(CONTINUED ON NEXT PAGE)

CODES FOR ZR-6 SPECIFIC COMMANDS

(h) – Command supports hold function

Command	Code	Command	Code
Tuner Select	01	Record	144
Source 2 Select	02 (h)		
Source 3 Select	03 (h)	Shuffle	45
Source 4 Select	04 (h)	Group	46
Source 5 Select	05 (h)	Disc	47
Source 6 Select	06 (h)	Favorites	48
Volume up	12	Page Up	126
Volume down	13	Page Down	127
Mute	11		
OFF	10(h)		
Power	49		
# 1	33		
# 2	34		
# 3	35		
# 4	36		
# 5	37		
# 6	38		
# 7	39		
# 8	40		
# 9	41		
# 0	42		
Enter	69		
Cursor Up	23		
Cursor Down	29		
Cursor Left	25		
Cursor Right	27		
Select	26		
Next	44		
Previous	43		
Play	17		
Pause	19		
Stop	18		
Fast Forward	21		
Rewind	20		

The Solo-6 MD displays the following screens whenever the corresponding source device is selected.

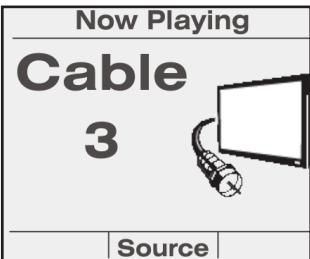
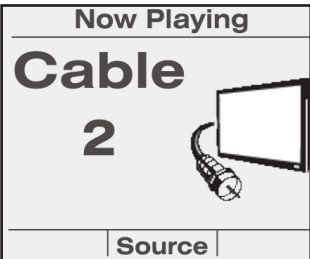
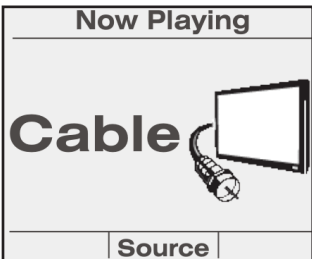
DEVICE NAME: NO SOURCE CONNECTED (N/A)



DEVICE NAME: BLU-RAY



DEVICE NAME: CABLE



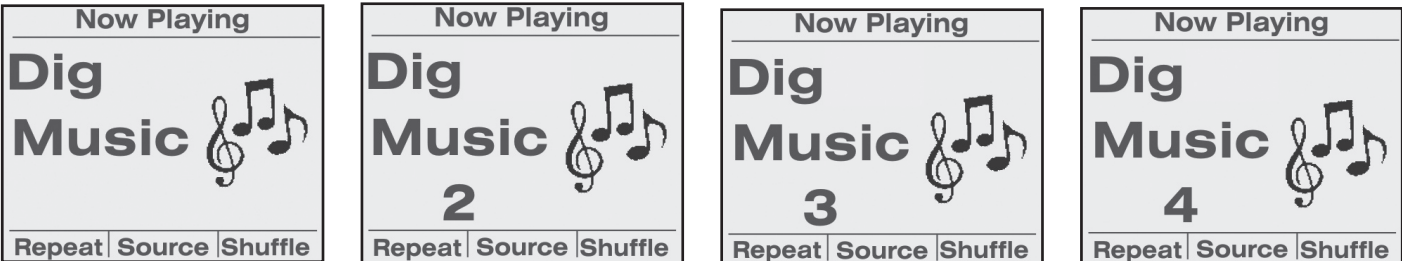
DEVICE NAME: CD



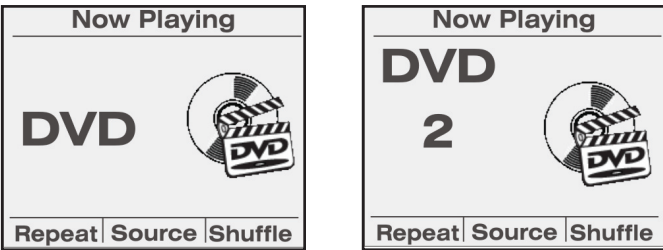
DEVICE NAME: CD CHANGERS



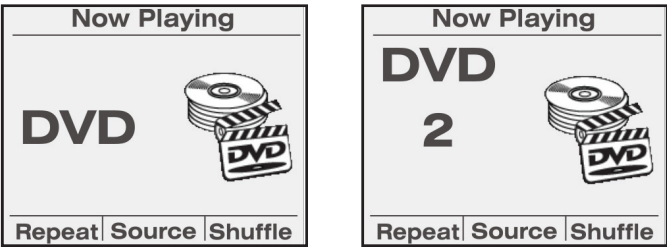
DEVICE NAME: DIGITAL MUSIC SERVER (DMS)



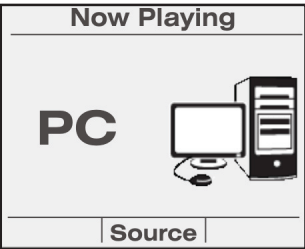
DEVICE NAME: DVD PLAYER



DEVICE NAME: DVD CHANGER



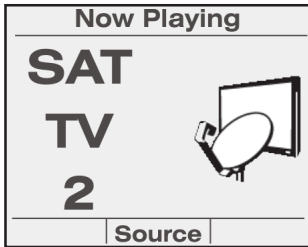
DEVICE NAME: PC



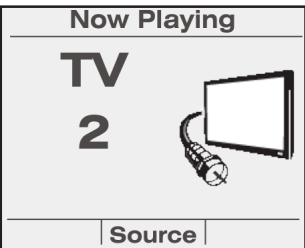
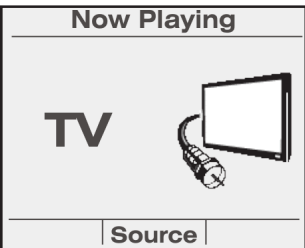
DEVICE NAME: SATELLITE RADIO



DEVICE NAME: SATELLITE TV



DEVICE NAME: TV



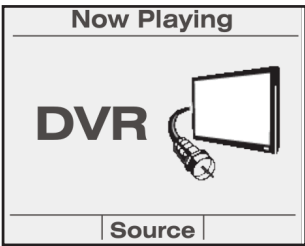
DEVICE NAME: MP3 PLAYER



DEVICE NAME: VIDEO



DEVICE NAME: DIGITAL VIDEO RECORDER



DEVICE NAME: GAME



DEVICE NAME: HDTV



DEVICE NAME: MUSIC



STORED IR SEQUENCE - SOURCE 1

Job Name: _____

Step #	Source Function	Niles Remote Button
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____
8	_____	_____
9	_____	_____
10	_____	_____
11	_____	_____
12	_____	_____
13	_____	_____
14	_____	_____
15	_____	_____
16	_____	_____
17	_____	_____
18	_____	_____
19	_____	_____
20	_____	_____
21	_____	_____
22	_____	_____
23	_____	_____
24	_____	_____
25	_____	_____
26	_____	_____
27	_____	_____
28	_____	_____
29	_____	_____
30	_____	_____
31	_____	_____
32	_____	_____

Source Name: _____

Step #	Source Function	Niles Remote Button
33	_____	_____
34	_____	_____
35	_____	_____
36	_____	_____
37	_____	_____
38	_____	_____
39	_____	_____
40	_____	_____
41	_____	_____
42	_____	_____
43	_____	_____
44	_____	_____
45	_____	_____
46	_____	_____
47	_____	_____
48	_____	_____
49	_____	_____
50	_____	_____
51	_____	_____
52	_____	_____
53	_____	_____
54	_____	_____
55	_____	_____
56	_____	_____
57	_____	_____
58	_____	_____
59	_____	_____
60	_____	_____
61	_____	_____
62	_____	_____
63	_____	_____
64	_____	_____

STORED IR SEQUENCE - SOURCE 2

Job Name: _____

Step #	Source Function	Niles Remote Button
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____
8	_____	_____
9	_____	_____
10	_____	_____
11	_____	_____
12	_____	_____
13	_____	_____
14	_____	_____
15	_____	_____
16	_____	_____
17	_____	_____
18	_____	_____
19	_____	_____
20	_____	_____
21	_____	_____
22	_____	_____
23	_____	_____
24	_____	_____
25	_____	_____
26	_____	_____
27	_____	_____
28	_____	_____
29	_____	_____
30	_____	_____
31	_____	_____
32	_____	_____

Source Name: _____

Step #	Source Function	Niles Remote Button
33	_____	_____
34	_____	_____
35	_____	_____
36	_____	_____
37	_____	_____
38	_____	_____
39	_____	_____
40	_____	_____
41	_____	_____
42	_____	_____
43	_____	_____
44	_____	_____
45	_____	_____
46	_____	_____
47	_____	_____
48	_____	_____
49	_____	_____
50	_____	_____
51	_____	_____
52	_____	_____
53	_____	_____
54	_____	_____
55	_____	_____
56	_____	_____
57	_____	_____
58	_____	_____
59	_____	_____
60	_____	_____
61	_____	_____
62	_____	_____
63	_____	_____
64	_____	_____

STORED IR COMMANDS - SOURCE 2

Job Name: _____

Source Name: _____

Niles Remote Button	Source Function
Play	Play
Pause	Pause
Stop	Stop
Forward	Forward
Rewind	Rewind
Previous	Previous
Next	Next
Cursor Up	Cursor Up
Cursor Down	Cursor Down
Cursor Left	Cursor Left
Cursor Right	Cursor Right
OK	Select
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0

Niles Remote Button	Source Function
Channel Up	
Channel Down	
Last	
List	
Menu	
Info	
Guide	
Exit	
Red	
Green	
Yellow	
Blue	
Input	
Replay	
Disc	
Page Up	
Page Down	
Live	
Fav	
Random	
Group	

STORED IR SEQUENCE - SOURCE 3

Job Name: _____

Step #	Source Function	Niles Remote Button
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____
8	_____	_____
9	_____	_____
10	_____	_____
11	_____	_____
12	_____	_____
13	_____	_____
14	_____	_____
15	_____	_____
16	_____	_____
17	_____	_____
18	_____	_____
19	_____	_____
20	_____	_____
21	_____	_____
22	_____	_____
23	_____	_____
24	_____	_____
25	_____	_____
26	_____	_____
27	_____	_____
28	_____	_____
29	_____	_____
30	_____	_____
31	_____	_____
32	_____	_____

Source Name: _____

Step #	Source Function	Niles Remote Button
33	_____	_____
34	_____	_____
35	_____	_____
36	_____	_____
37	_____	_____
38	_____	_____
39	_____	_____
40	_____	_____
41	_____	_____
42	_____	_____
43	_____	_____
44	_____	_____
45	_____	_____
46	_____	_____
47	_____	_____
48	_____	_____
49	_____	_____
50	_____	_____
51	_____	_____
52	_____	_____
53	_____	_____
54	_____	_____
55	_____	_____
56	_____	_____
57	_____	_____
58	_____	_____
59	_____	_____
60	_____	_____
61	_____	_____
62	_____	_____
63	_____	_____
64	_____	_____

STORED IR COMMANDS - SOURCE 3

Job Name: _____

Source Name: _____

Niles Remote Button	Source Function
Play	Play
Pause	Pause
Stop	Stop
Forward	Forward
Rewind	Rewind
Previous	Previous
Next	Next
Cursor Up	Cursor Up
Cursor Down	Cursor Down
Cursor Left	Cursor Left
Cursor Right	Cursor Right
OK	Select
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0

Niles Remote Button	Source Function
Channel Up	
Channel Down	
Last	
List	
Menu	
Info	
Guide	
Exit	
Red	
Green	
Yellow	
Blue	
Input	
Replay	
Disc	
Page Up	
Page Down	
Live	
Fav	
Random	
Group	

STORED IR SEQUENCE - SOURCE 4

Job Name: _____

Step #	Source Function	Niles Remote Button
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____
8	_____	_____
9	_____	_____
10	_____	_____
11	_____	_____
12	_____	_____
13	_____	_____
14	_____	_____
15	_____	_____
16	_____	_____
17	_____	_____
18	_____	_____
19	_____	_____
20	_____	_____
21	_____	_____
22	_____	_____
23	_____	_____
24	_____	_____
25	_____	_____
26	_____	_____
27	_____	_____
28	_____	_____
29	_____	_____
30	_____	_____
31	_____	_____
32	_____	_____

Source Name: _____

Step #	Source Function	Niles Remote Button
33	_____	_____
34	_____	_____
35	_____	_____
36	_____	_____
37	_____	_____
38	_____	_____
39	_____	_____
40	_____	_____
41	_____	_____
42	_____	_____
43	_____	_____
44	_____	_____
45	_____	_____
46	_____	_____
47	_____	_____
48	_____	_____
49	_____	_____
50	_____	_____
51	_____	_____
52	_____	_____
53	_____	_____
54	_____	_____
55	_____	_____
56	_____	_____
57	_____	_____
58	_____	_____
59	_____	_____
60	_____	_____
61	_____	_____
62	_____	_____
63	_____	_____
64	_____	_____

STORED IR COMMANDS - SOURCE 4

Job Name: _____

Source Name: _____

Niles Remote Button	Source Function
Play	Play
Pause	Pause
Stop	Stop
Forward	Forward
Rewind	Rewind
Previous	Previous
Next	Next
Cursor Up	Cursor Up
Cursor Down	Cursor Down
Cursor Left	Cursor Left
Cursor Right	Cursor Right
OK	Select
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0

Niles Remote Button	Source Function
Channel Up	
Channel Down	
Last	
List	
Menu	
Info	
Guide	
Exit	
Red	
Green	
Yellow	
Blue	
Input	
Replay	
Disc	
Page Up	
Page Down	
Live	
Fav	
Random	
Group	

STORED IR SEQUENCE - SOURCE 5

Job Name: _____

Step #	Source Function	Niles Remote Button
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____
8	_____	_____
9	_____	_____
10	_____	_____
11	_____	_____
12	_____	_____
13	_____	_____
14	_____	_____
15	_____	_____
16	_____	_____
17	_____	_____
18	_____	_____
19	_____	_____
20	_____	_____
21	_____	_____
22	_____	_____
23	_____	_____
24	_____	_____
25	_____	_____
26	_____	_____
27	_____	_____
28	_____	_____
29	_____	_____
30	_____	_____
31	_____	_____
32	_____	_____

Source Name: _____

Step #	Source Function	Niles Remote Button
33	_____	_____
34	_____	_____
35	_____	_____
36	_____	_____
37	_____	_____
38	_____	_____
39	_____	_____
40	_____	_____
41	_____	_____
42	_____	_____
43	_____	_____
44	_____	_____
45	_____	_____
46	_____	_____
47	_____	_____
48	_____	_____
49	_____	_____
50	_____	_____
51	_____	_____
52	_____	_____
53	_____	_____
54	_____	_____
55	_____	_____
56	_____	_____
57	_____	_____
58	_____	_____
59	_____	_____
60	_____	_____
61	_____	_____
62	_____	_____
63	_____	_____
64	_____	_____

STORED IR COMMANDS - SOURCE 5

Job Name: _____

Source Name: _____

Niles Remote Button	Source Function
Play	Play
Pause	Pause
Stop	Stop
Forward	Forward
Rewind	Rewind
Previous	Previous
Next	Next
Cursor Up	Cursor Up
Cursor Down	Cursor Down
Cursor Left	Cursor Left
Cursor Right	Cursor Right
OK	Select
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0

Niles Remote Button	Source Function
Channel Up	
Channel Down	
Last	
List	
Menu	
Info	
Guide	
Exit	
Red	
Green	
Yellow	
Blue	
Input	
Replay	
Disc	
Page Up	
Page Down	
Live	
Fav	
Random	
Group	

STORED IR SEQUENCE - SOURCE 6

Job Name: _____

Step #	Source Function	Niles Remote Button
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____
8	_____	_____
9	_____	_____
10	_____	_____
11	_____	_____
12	_____	_____
13	_____	_____
14	_____	_____
15	_____	_____
16	_____	_____
17	_____	_____
18	_____	_____
19	_____	_____
20	_____	_____
21	_____	_____
22	_____	_____
23	_____	_____
24	_____	_____
25	_____	_____
26	_____	_____
27	_____	_____
28	_____	_____
29	_____	_____
30	_____	_____
31	_____	_____
32	_____	_____

Source Name: _____

Step #	Source Function	Niles Remote Button
33	_____	_____
34	_____	_____
35	_____	_____
36	_____	_____
37	_____	_____
38	_____	_____
39	_____	_____
40	_____	_____
41	_____	_____
42	_____	_____
43	_____	_____
44	_____	_____
45	_____	_____
46	_____	_____
47	_____	_____
48	_____	_____
49	_____	_____
50	_____	_____
51	_____	_____
52	_____	_____
53	_____	_____
54	_____	_____
55	_____	_____
56	_____	_____
57	_____	_____
58	_____	_____
59	_____	_____
60	_____	_____
61	_____	_____
62	_____	_____
63	_____	_____
64	_____	_____

STORED IR COMMANDS - SOURCE 6

Job Name: _____

Source Name: _____

Niles Remote Button	Source Function
Play	Play
Pause	Pause
Stop	Stop
Forward	Forward
Rewind	Rewind
Previous	Previous
Next	Next
Cursor Up	Cursor Up
Cursor Down	Cursor Down
Cursor Left	Cursor Left
Cursor Right	Cursor Right
OK	Select
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0

Niles Remote Button	Source Function
Channel Up	
Channel Down	
Last	
List	
Menu	
Info	
Guide	
Exit	
Red	
Green	
Yellow	
Blue	
Input	
Replay	
Disc	
Page Up	
Page Down	
Live	
Fav	
Random	
Group	

STORED IR COMMANDS - LIBRARY 1

Job Name: _____

Source Name: _____

Niles Remote Button	Source Function
Play	_____
Pause	_____
Stop	_____
Forward	_____
Rewind	_____
Previous	_____
Next	_____
Cursor Up	_____
Cursor Down	_____
Cursor Left	_____
Cursor Right	_____
OK	_____
1	_____
2	_____
3	_____
4	_____
5	_____
6	_____
7	_____
8	_____
9	_____
0	_____

Niles Remote Button	Source Function
Channel Up	_____
Channel Down	_____
Last	_____
List	_____
Menu	_____
Info	_____
Guide	_____
Exit	_____
Red	_____
Green	_____
Yellow	_____
Blue	_____
Input	_____
Replay	_____
Disc	_____
Page Up	_____
Page Down	_____
Live	_____
Fav	_____
Random	_____
Group	_____

STORED IR COMMANDS - LIBRARY 2/VS-6

Job Name: _____

Source Name: _____

Niles Remote Button	Source Function
Play	_____
Pause	_____
Stop	_____
Forward	_____
Rewind	_____
Skip Forward	_____
Skip Reverse	_____
Enter	_____
Volume Up	_____
Volume Down	_____
Mute	_____
Last	_____
Input	_____
1	Zone 1 to Source 1
2	Zone 1 to Source 2
3	Zone 1 to Source 3
4	Zone 1 to Source 4
5	Zone 1 to Source 5
6	Zone 1 to Source 6
7	Zone 2 to Source 1
8	Zone 2 to Source 2
9	Zone 2 to Source 3
0	Zone 2 to Source 4
Fav	Zone 2 to Source 5
Disc	Zone 2 to Source 6

Niles Remote Button	Source Function
Live	Zone 3 to Source 1
Page Up	Zone 3 to Source 2
Page Down	Zone 3 to Source 3
Group	Zone 3 to Source 4
Random	Zone 3 to Source 5
Replay	Zone 3 to Source 6
Prev	Zone 4 to Source 1
Next	Zone 4 to Source 2
Red	Zone 4 to Source 3
Green	Zone 4 to Source 4
Yellow	Zone 4 to Source 5
Blue	Zone 4 to Source 6
Cursor Up	Zone 5 to Source 1
Cursor Down	Zone 5 to Source 2
Cursor Left	Zone 5 to Source 3
Cursor Right	Zone 5 to Source 4
OK	Zone 5 to Source 5
List	Zone 5 to Source 6
Menu	Zone 6 to Source 1
Info	Zone 6 to Source 2
Guide	Zone 6 to Source 3
Exit	Zone 6 to Source 4
Channel Up	Zone 6 to Source 5
Channel Down	Zone 6 to Source 6



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